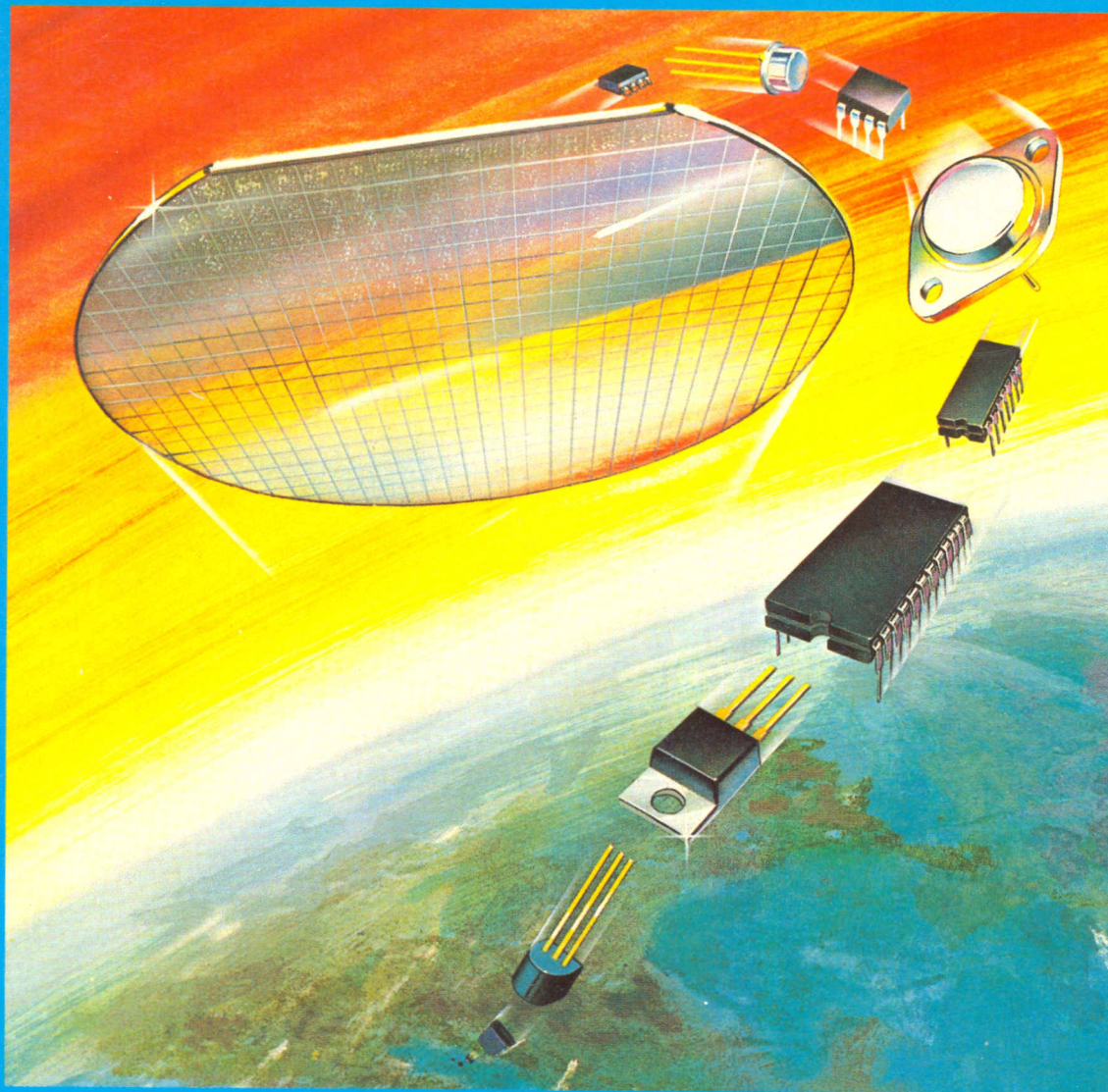


LINEAR / INTERFACE

Selector Guide & Cross Reference



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MOTOROLA



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First Edition 1984 - F106
Printed in Switzerland

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Operational Amplifiers

Motorola offers a broad line of operational amplifiers to meet a wide range of usages. From low-cost industry-standard types to high precision circuits, the span encompasses a large range of performance capabilities. These linear integrated circuits are available as single, dual, and quad monolithic devices in a variety of package styles as well as standard chips.

Single Operational Amplifiers

Noncompensated

Device	I _B μA Max	V _{IO} mV Max	TCV _{IO} μV/°C Typ	I _{IO} nA Max	A _{vol} V/mV Min	BW (A _V =1) MHz Typ	SR (A _V =1) V/μs Typ	Supply Voltage V Min Max		Description	Packages
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Military Temperature Range (-55°C to +125°C)

LM101A	0.075	2.0	10	10	50	1.0	0.5	±3.0	±22	General Purpose	601,693
LM108	0.002	2.0	3.0	0.2	50	1.0	0.3	±3.0	±20	Precision	601,693
LM108A	0.002	0.5	1.0	0.2	80	1.0	0.3	±3.0	±20	Precision	601,693
MC1539	0.5	3.0	15	60	50	2.0	4.2	±4.0	±18	High Slew Rate	601
MC1709	0.5	5.0	15	200	25	1.0	0.3	±3.0	±18	General Purpose	601,693
MC1709A	0.6	3.0	5.0	100	25	1.0	0.5	±3.0	±18	High Performance MC1709	601
MC1748	0.5	5.0	15	200	50	1.0	0.5	±3.0	±22	General Purpose	601,693

Commercial Temperature Range (0°C to +70°C)

LM301A	0.25	7.5	10	50	25	1.0	0.5	±3.0	±18	General Purpose	601,626,693,751
LM308	7.0	7.5	15	1.0	25	1.0	0.3	±3.0	±18	Precision	601,626,693
LM308A	7.0	0.5	5.0	1.0	80	1.0	0.3	±3.0	±18	Precision	601,626,693
MC1439	1.0	7.5	15	100	15	2.0	4.2	±6.0	±18	High Slew Rate	601,626
MC1709C	1.5	7.5	15	500	15	1.0	0.3	±3.0	±18	General Purpose	601,626,693
MC1748C	0.5	6.0	15	200	20	1.0	0.5	±3.0	±18	General Purpose	601,626,693

Industrial Temperature Range (-25°C to +85°C)

LM201A	0.075	2.0	10	10	50	1.0	0.5	±3.0	±22	General Purpose	601,626,693
LM208	0.002	2.0	3.0	0.2	50	1.0	0.3	±3.0	±20	Precision	601,632,693
LM208A	0.002	0.5	1.0	0.2	80	1.0	0.3	±3.0	±20	Precision	601,632,693

Internally Compensated

Device	I _B μA Max	V _{IO} mV Max	TCV _{IO} μV/°C Typ	I _{IO} nA Max	A _{vol} V/mV Min	BW (A _V =1) MHz Typ	SR (A _V =1) V/μs Typ	Supply Voltage V Min Max		Description	Packages
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Military Temperature Range (-55°C to +125°C)

LM11	50 pA	0.3	1.0	10 pA	250	1.0	0.3	±3.0	±20	Precision	601,632,693
MC1536	0.02	5.0	10	3.0	100	1.0	2.0	±15	±40	High Voltage	693,601
MC1556	0.015	4.0	10	2.0	100	1.0	2.5	±3.0	±22	High Performance	601,693
MC1733	0.20	—	—	3.0 μA	90	90	—	±4.0	±8.0	Differential Wideband Video Amp	603,632
MC1741	0.5	5.0	15	200	50	1.0	0.5	±3.0	±22	General Purpose	601,693
MC1741N	0.5	5.0	15	200	50	1.0	0.5	±3.0	±22	Low Noise	601,693
MC1741S	0.5	5.0	15	200	50	1.0	10	±3.0	±22	High Slew Rate	601,693
MC1776	0.0075	5.0	15	3.0	200	1.0	0.2	±1.5	±18	μPower, Programmable	601,632
MC35001	100 pA	10	10	100 pA	25	4.0	13	±5.0	±22	JFET Input	601,693
MC35001A	75 pA	2.0	10	25 pA	50	4.0	13	±5.0	±22	JFET Input	601,693
MC35001B	100 pA	5.0	10	50 pA	50	4.0	13	±5.0	±22	JFET Input	601,693
MC35071	0.5	4.5	10	75	25	4.5	10	±3.0	±44	High Performance	601,693
MC35071A	0.5	2.0	10	50	50	4.5	10	±3.0	±44	Single Supply	601,693
MC35081	200pA	10	10	50pA	25	10	40	±5.0	±18	High Speed	601,693
MC35081A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	JFET Input	601,693

Single Operational Amplifiers (continued) **Internally Compensated**

Device	I _B μA Max	V _{IO} mV Max	TC _{VIO} μV/°C Typ	I _O nA Max	A _{vol} V/mV Min	BW (A _v =1) MHz Typ	SR (A _v =1) V/μs Typ	Supply Voltage V Min Max		Description	Packages
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Military Temperature Range (–55°C to +125°C)

OP-27A	0.040	0.025	0.2	35	1000	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-27B	0.055	0.060	0.3	50	1000	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-27C	0.080	0.100	0.4	75	700	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-37A	0.040	0.025	0.2	35	1000	40	17	±4.0	±22	Low Noise, Precision,	601,693
OP-37B	0.055	0.060	0.3	50	1000	40	17	±4.0	±22	Decompensated for	601,693
OP-37C	0.080	0.100	0.4	75	700	40	17	±4.0	±22	A _v ≥ 5	601,693
TL071M	200 pA	6.0	10	50 pA	35	4.0	13	±5.0	±18	Low Noise, JFET Input	693
TL081M	200 pA	9.0	10	100 pA	25	4.0	13	±5.0	±18	JFET Input	693

Commercial Temperature Range (0°C to +70°C)

LF351	200 pA	10	10	100 pA	25	4.0	13	±5.0	±18	JFET Input	626
LF355	200 pA	10	5.0	50 pA	50	1.0	5.0	±5.0	±18	JFET Input	601,626,693
LF355B	100 pA	5.0	5.0	20 pA	50	2.5	5.0	±5.0	±22	JFET Input	601,626,693
LF356	200 pA	10	5.0	50 pA	50	2.0	15	±5.0	±18	JFET Input	601,626,693
LF356B	100 pA	5.0	5.0	20 pA	50	5.0	12	±5.0	±22	JFET Input	601,626,693
LF357	200 pA	10	5.0	50 pA	50	3.0	75	±5.0	±18	Wideband FET Input	601,626,693
LF357B	100 pA	5.0	5.0	20 pA	50	20	50	±5.0	±22	JFET Input	601,626,693
LM11C	100 pA	0.6	2.0	10 pA	250	1.0	0.3	±0.3	±20	Precision	626,632,646,601
LM11CL	200 pA	5.0	3.0	25 pA	50	1.0	0.3	±3.0	±20	Precision	693
LM307	0.25	7.5	10	50	25	1.0	0.5	±3.0	±18	General Purpose	626
MC1436	0.04	10	12	10	70	1.0	2.0	±15	±34	High Voltage	626,601,693
MC1456	0.03	10	12	10	70	1.0	2.5	±3.0	±18	High Performance	601,626,693
MC1733C	30	—	—	5.0 μA	80	90	—	±4.0	±8.0	Differential Wideband Video Amp	601,632,646
MC1741C	0.5	6.0	15	200	20	1.0	0.5	±3.0	±18	General Purpose	601,626,693,751
MC1741NC	0.5	6.0	15	200	20	1.0	0.5	±3.0	±18	Low Noise	601,626,693
MC1741SC	0.5	6.0	15	200	20	1.0	10	±3.0	±18	High Slew Rate	601,626,693
MC1776C	0.003	6.0	15	3.0	100	1.0	0.2	±1.5	±18	μPower, Programmable	693,626,601,751
MC3476	0.05	6.0	15	25	50	1.0	0.2	±1.5	±18	Low Cost	601,626,693
MC34001	200 pA	10	10	100 pA	25	4.0	13	±5.0	±18	μPower, Programmable	601,626,693,751
MC34001A	100 pA	2.0	10	50 pA	50	4.0	13	±5.0	±18	JFET Input	601,626,693,751
MC34001B	200 pA	5.0	10	100 pA	50	4.0	13	±5.0	±18	JFUT Input	601,626,693,751
MC34071	0.5	4.5	10	75	25	4.5	10	+3.0	+44	JFET Input	601,626,693
MC34071A	0.5	2.0	10	50	50	4.5	10	+3.0	+44	High Performance	601,626,693
MC34081	200pA	10	10	50pA	25	10	40	±5.0	±18	Single Supply	601,626,693
MC34081A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	High speed	601,626,693
OP-27EP	0.040	0.025	0.2	35	1000	8.0	2.8	±4.0	±22	JFET Input	601,626,693
OP-27FP	0.055	0.060	0.3	50	1000	8.0	2.8	±4.0	±22	Low Noise, Precision	626
OP-27GP	0.080	0.100	0.4	75	700	8.0	2.8	±4.0	±22	Low Noise, Precision	626
OP-37EP	0.040	0.025	0.2	35	1000	40	17	±4.0	±22	Low Noise, Precision	626
OP-27FP	0.055	0.060	0.3	50	1000	40	17	±4.0	±22	Low Noise, Precision	626
OP-27GP	0.080	0.100	0.4	75	700	40	17	±4.0	±22	Decompensated for	626
TL071AC	200 pA	6.0	10	50 pA	50	4.0	13	±5.0	±18	A _v ≥ 5	626
TL071BC	200 pA	3.0	10	50 pA	50	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL071C	200 pA	10	10	50 pA	25	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL081AC	200 pA	6.0	10	100 pA	50	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL081BC	200 pA	3.0	10	100 pA	50	4.0	13	±5.0	±18	JFET Input	626,693
TL081C	400 pA	15	10	200 pA	25	4.0	13	±5.0	±18	JFET Input	626,693

Industrial Temperature Range (–25°C to +85°C)

MC33071	0.5	4.5	10	75	25	4.5	10	+3.0	+44	High Performance	601,626,693
MC33071A	0.5	2.0	10	50	50	4.5	10	+3.0	+44	Single Supply	601,626,693
MC33081	200pA	10	10	50pA	25	10	40	±5.0	±18	High speed	601,626,693
MC33081A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	JFET Input	601,626,693
OP-27E	0.040	0.025	0.2	35	1000	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-27F	0.055	0.060	0.3	50	1000	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-27G	0.080	0.100	0.4	75	700	8.0	2.8	±4.0	±22	Low Noise, Precision	601,693
OP-37E	0.040	0.025	0.2	35	1000	40	17	±4.0	±22	Low Noise, Precision	601,693
OP-37F	0.055	0.060	0.3	50	1000	40	17	±4.0	±22	Decompensated for	601,693
OP-37G	0.080	0.100	0.4	75	700	40	17	±4.0	±22	A _v ≥ 5	601,693

Dual Operational Amplifiers

Internally Compensated

Internally Compensated											
	I _B μA	V _{IO} mV	TCV _{IO} μV/°C	I _{IO} nA	A _{vol} V/mV	BW (A _v =1) MHz	SR (A _v =1) V/μs	Supply Voltage V			
Device	Max	Max	Typ	Max	Min	Typ	Typ	Min	Max	Description	Packages
Military Temperature Range (−55°C to +125°C)											
LM158	0.15	5.0	10	30	50	1.0	0.6	±1.5 +3.0	±18 +36	Split Supplies Single Supply (Low Power Consumption)	601,632,693
MC1558	0.5	5.0	10	200	50	1.1	0.8	±3.0	±22	Dual MC1741	601,693
MC1558N	0.5	5.0	10	200	50	1.1	0.8	±3.0	±22	Low Noise	601,693
MC1558S	0.5	5.0	10	200	50	1.0	10	±3.0	±22	High Slew Rate	601,693
MC1747	0.5	5.0	10	200	50	1.0	0.5	±3.0	±22	Dual MC1741	601,632
MC3558	0.5	5.0	10	50	50	1.0	0.6	±1.5 +3.0	±18 +36	Split Supplies Single Supply	601,693
MC4558	0.5	5.0	10	200	50	4.0	1.5	±3.0	±22	High Frequency	601,693
MC35002	100 pA	10	10	100 pA	25	4.0	13	±5.0	±22	JFET Input	601,693
MC35002A	75 pA	2.0	10	25 pA	50	4.0	13	±5.0	±22	JFET Input	601,693
MC35002B	100 pA	5.0	10	50 pA	50	4.0	13	±5.0	±22	JFET Input	601,693
MC35072	0.5	4.5	10	75	25	4.5	10	+3.0	+44	High Performance	601,693
MC35072A	0.5	2.0	10	50	50	4.5	10	+3.0	+44	Single Supply	601,693
MC35082	200pA	10	10	50pA	25	10	40	±5.0	±18	High speed	601,693
MC35082A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	JFET Input	601,693
TL072M	200 pA	6.0	10	50 pA	35	4.0	13	±5.0	±18	Low Noise, JFET Input	693
TL082M	200 pA	6.0	10	100 pA	25	4.0	13	±5.0	±18	JFET Input	693
Commercial Temperature Range (0°C to +70°C)											
LF353	200 pA	10	10	100 pA	25	4.0	13	±5.0	±18	JFET Input	626
LM358	0.25	6.0	7.0	50	25	1.0	0.6	±1.5 +3.0	±18 +36	Single Supply (Low Power Consumption)	601,626,693,751
MC1458	0.5	6.0	10	200	20	1.1	0.8	±3.0	±18	Dual MC1741	601,626,693,751
MC1458C	0.70	10	10	300	20	1.1	0.8	±3.0	±18	Dual General Purpose	601,626,751
MC1458N	0.5	6.0	10	200	20	1.1	0.8	±3.0	±18	Low Noise	601,626,693
MC1458S	0.5	6.0	10	200	20	1.0	10	±3.0	±18	High Slew Rate	601,626,693
MC1747C	0.5	6.0	10	200	25	1.0	0.5	±3.0	±18	Dual MC1741	603,632,646
MC3458	0.5	10	7.0	50	20	1.0	0.6	±1.5 +3.0	±18 +36	Split Supplies Single Supply (Low Crossover Distortion)	601,626,693
MC4558C	0.5	6.0	10	200	20	3.0	1.5	±3.0	+18	High Frequency	601,626,693,751
MC34002	200 pA	10	10	100 pA	25	4.0	13	±5.0	±18	JFET Input	601,626,693,751
MC34002A	100pA	2.0	10	50pA	50	4.0	13	±5.0	±18	JFET Input	601,626,693,751
MC34002B	200pA	5.0	10	100pA	25	4.0	13	±5.0	±18	JFET Input	601,626,693,751
MC34072	0.5	4.5	10	75	25	4.5	10	+3.0	+44	High Performance	601,626,693
MC34072A	0.5	2.0	10	50	50	4.5	10	+3.0	+44	Single Supply	601,626,693
MC34082	200pA	10	10	50pA	25	10	40	±5.0	±18	High speed	601,626,693
MC34082A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	JFET Input	601,626,693
TL072AC	200 pA	6.0	10	50 pA	50	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL072BC	200 pA	3.0	10	50 pA	50	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL072C	200 pA	10	10	50 pA	25	4.0	13	±5.0	±18	Low Noise, JFET Input	626,693
TL082AC	200 pA	6.0	10	100 pA	50	4.0	13	±5.0	±18	JFET Input	626,693
TL082BC	200 pA	3.0	10	100 pA	50	4.0	13	±5.0	±18	JFET Input	626,693
TL082C	400 pA	15	10	200 pA	25	4.0	13	±5.0	±18	JFET Input	626,693
Automotive Temperature Range (−40°C to +85°C)											
MC3358	5.0	8.0	10	75	20	1.0	0.6	±1.5 +3.0	±18 +36	Split Supplies Single Supplies	626
LM2904	0.25	7.0	7.0	50	100 typ	1.0	0.6	±1.5 ±3.0	±13 ±26	Split or Single Supply OP Amp	626,751
MC33072	0.5	4.5	10	75	25	4.5	10	+3.0	+44	High Performance	601,626,693
MC33072A	0.5	2.0	10	50	50	4.5	10	+3.0	+44	Single Supply	601,626,693
MC33082	200pA	10	10	50pA	25	10	40	±5.0	±18	High speed	601,626,693
MC33082A	200pA	5.0	10	50pA	50	10	40	±5.0	±18	JFET Input	601,626,693

Dual Operational Amplifiers (continued)

Internally Compensated

Internally Compensated											
Device	I _B μA Max	V _{IO} mV Max	TC _{VIO} μV/°C Typ	I _{IO} nA Max	A _{vol} V/mV Min	BW (A _V = 1) MHz Typ	SR (A _V = 1) V/μs Typ	Supply Voltage V Min Max		Description	Packages
Industrial Temperature Range (–25°C to +85°C)											
LM258	0.15	5.0	10	30	50	1.0	0.6	± 1.5 ± 3.0	± 18 ± 36	Split or Single Supply OP Amp	601,626,693

Noncompensated

Military Temperature Range (–55°C to +125°C)

MC1537	0.5	5.0	10	200	25	1.0	0.25	± 3.0	± 18	Dual MC1709	632
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Commercial Temperature Range (0°C to +70°C)

MC1437	1.5	7.5	10	500	15	1.0	0.25	± 3.0	± 18	Dual MC1709	632,646
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Quad Operational Amplifiers

Internally Compensated

Military Temperature Range (–55°C to +125°C)

LM124	0.15	5.0	7.0	30	50	1.0	0.6	± 1.5 $+3.0$	± 16 $+32$	Low Power Consumption Quad MC1741	632,646 632
LM148	0.10	5.0	—	25	50	1.0	0.5	± 3.0	± 18	General Purpose	632,646
MC3503	0.5	5.0	7.0	50	50	1.0	0.6	± 1.5 $+3.0$	± 18 $+36$	Low Power Quad MC1741	632,646 632
MC4741	0.5	5.0	15	200	50	1.0	0.5	± 3.0	± 22	JFET Input	632
MC35004	100 pA	10	10	100 pA	25	4.0	13	± 5.0	± 22	JFET Input	632
MC35004B	100 pA	5.0	10	50 pA	50	4.0	13	± 5.0	± 22	High Performance, Single Supply	632
MC35074	0.50	4.5	10	75	25	4.5	10	$+3.0$	$+44$	Hi-Speed, JFET Input	632
MC35074A	0.50	2.0	10	50	50	4.5	10	$+3.0$	$+44$	Hi-Speed, JFET Input	632
MC35084	200 pA	10	10	50 pA	25	10	40	± 5.0	± 18	Decompensated	632
MC35084A	200 pA	5.0	10	50 pA	50	10	40	± 5.0	± 18	MC35084 for $A_V \geq 2$	632
MC35085	200 pA	10	10	50 pA	25	20	80	± 5.0	± 18	Low Noise, JFET Input	632
MC35085A	200 pA	5.0	10	50 pA	50	20	80	± 5.0	± 18	JFET Input	632
TL074M	200 pA	9.0	10	50 pA	35	4.0	13	± 5.0	± 18		
TL084M	200 pA	9.0	10	100 pA	25	4.0	13	± 5.0	± 18		

Commercial Temperature Range (0°C to +70°C)

LF347	200 pA	10	10	100 pA	25	4.0	13	± 5.0	± 18	JFET Input	646
LF347B	200 pA	5.0	10	100 pA	50	4.0	13	± 5.0	± 18	JFET Input	646
LM324	0.25	6.0	7.0	50	25	1.0	0.6	± 1.5 $+3.0$	± 16 $+32$	Low Power Consumption	632,646,751A
LM324A	0.10	3.0	7.0	30	25	1.0	0.6	± 1.5 $+3.0$	± 16 $+32$	Low Power Consumption	632,646,751A
LM348	0.20	6.0	—	50	25	1.0	0.5	± 3.0	± 18	Quad MC1741	632,646,751A
MC3401	0.3	—	—	—	1.0	5.0	0.6	± 1.5	± 18	Norton Input	632,646
LM3900								$+3.0$	$+36$		
MC3403	0.5	10	7.0	50	20	1.0	0.6	± 1.5 $+3.0$	± 18 $+36$	No Crossover Distortion	632,646,751A
MC4741C	0.5	6.0	15	200	20	1.0	0.5	± 3.0	± 18	Quad MC1741	632,646
MC34004	200 pA	10	10	100 pA	25	4.0	13	± 5.0	± 18	JFET Input	632,646
MC3400B	200 pA	5.0	10	100 pA	50	4.0	13	± 5.0	± 18	JFET Input	632,646
MC34074	0.50	4.5	10	75	25	4.5	10	$+3.0$	$+44$	High Performance	632,646
MC34074A	0.50	2.0	10	50	50	4.5	10	$+3.0$	$+44$	Single Supply	632,646
MC34084	200 pA	10	10	50 pA	25	10	40	± 5.0	± 18	Hi-Speed, JFET Input	632,646
MC34084A	200 pA	5.0	10	50 pA	50	10	40	± 5.0	± 18	Hi-Speed, JFET Input	632,646
MC34085	200 pA	10	10	50 pA	25	20	80	± 5.0	± 18	Decompensated	632,646
MC34085A	200 pA	5.0	10	50 pA	50	20	80	± 5.0	± 18	MC34084 for $A_V \geq 2$	632,646
TL074AC	200 pA	6.0	10	50 pA	50	4.0	13	± 5.0	± 18	Low Noise, JFET Input	632,646
TL074BC	200 pA	3.0	10	50 pA	50	4.0	13	± 5.0	± 18	Low Noise, JFET Input	632,646
TL074C	200 pA	10	10	50 pA	25	4.0	13	± 5.0	± 18	Low Noise, JFET Input	632,646
TL084AC	200 pA	6.0	10	100 pA	50	4.0	13	± 5.0	± 18	JFET Input	632,646
TL084BC	200 pA	3.0	10	100 pA	50	4.0	13	± 5.0	± 18	JFET Input	632,646
TL084C	400 pA	15	10	200 pA	25	4.0	13	± 5.0	± 18	JFET Input	632,646

Dual Operational Amplifiers (continued)

Internally Compensated

Device	I_B μA Max	V_{IO} mV Max	TC_{VIO} $\mu V/^\circ C$ Typ	I_O nA Max	A_{VOL} V/mV Min	BW ($A_V=1$) MHz Typ	SR ($A_V=1$) V/ μs Typ	Supply Voltage V Min Max		Description	Packages
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Automotive Temperature Range ($-40^\circ C$ to $+85^\circ C$)

LM2902	0.5	10	—	50	—	1.0	0.6	± 1.5 $+3.0$	± 13 $+26$	Differential Low Power	646,751A
MC3301	0.3	—	—	—	1.0	4.0	0.6	± 2.0 $+4.0$	± 15 $+28$	Norton Input	646
LM2900	—	—	—	—	—	—	—	—	—	—	—
MC3303	0.5	8.0	10	75	20	1.0	0.6	± 1.5 $+3.0$	± 18 $+36$	Differential General Purpose	646
MC33074	0.50	4.5	10	75	25	4.5	10	± 3.0 $+3.0$	± 44 $+44$	High Performance, Single Supply	632,646
MC33074A	0.50	2.0	10	50	50	4.5	10	± 3.0 $+3.0$	± 44 $+44$	Single Supply	632,646
MC33084	200 pA	10	10	50 pA	25	10	40	± 5.0 ± 5.0	± 18 ± 18	Hi-Speed, JFET Input	632,646
MC33084A	200 pA	5.0	10	50 pA	50	10	40	± 5.0 ± 5.0	± 18 ± 18	Hi-Speed, JFET Input	632,646
MC33085	200 pA	10	10	50 pA	25	20	80	± 5.0 ± 5.0	± 18 ± 18	Decompensated	632,646
MC33085A	200 pA	5.0	10	50 pA	50	20	80	± 5.0 ± 5.0	± 18 ± 18	MC33084 for $A_V \geq 2$	632,646

Industrial Temperature Range ($-25^\circ C$ to $+85^\circ C$)

LM224	0.15	5.0	7.0	30	50	1.0	0.6	± 1.5 ± 3.0	± 16 ± 32	Split or Single Supply OP Amp	632,646
LM248	0.20	6.0	—	50	25	1.0	0.5	± 3.0 ± 18	± 18 ± 18	Quad MC1741	632,646

Electrical Specifications




AGC Amplifiers

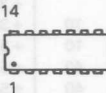
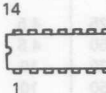



Operating Temperature Range		A_V dB	Band- width MHz	$V_{CC}/$ V_{EE} Vdc	Case
-55 to $+125^\circ C$	0 to $+75^\circ C$				
MC1590	—	44 Typ @ 4 Typ @	10 100	$+12/-$	601
MC1545	MC1445	19 Typ @	75	$+5/-5$	603,632

Non AGC Amplifiers

MC1733	MC1733C	52 40 20	@ 90 120	40	$+6/-6$	603,632, 646
SE592	NE592	55 45	@ @	40 90	$+6/-6$	603,632 646

Operational Amplifiers — Package Styles

			
CASE	601	603	626
MATERIAL	Metal	Metal	Plastic
SUFFIX after type number	G, H	G, H	P, P1, N

					
CASE	632	646	693	751	751A
MATERIAL	Ceramic	Plastic	Ceramic	Plastic	Plastic
SUFFIX after type number	J, L	P, P2	J-8, J, U	D	D

High Frequency Amplifiers

A variety of high-frequency circuits with features ranging from low-cost simplicity to multi-function versatility marks Motorola's line of integrated amplifiers. Devices described here are intended for industrial and communications applications. For devices especially dedicated to consumer products, i.e., TV and entertainment radio, see "Circuits for Consumer Applications".

Non-AGC Amplifiers

SE/NE592 — Differential Two Stage Video Amplifier

A monolithic, two state differential output, wideband video amplifier. It offers fixed gains of 100 and 400 without external components and adjustable gains from 400 to 0 with one external resistor. The input stage has been designed so that with the addition of a few external reactive elements between the gain select terminals, the circuit can function as a high pass, low pass, or band pass filter. This feature makes the circuit ideal for use as a video or pulse amplifier in communications, magnetic memories, display and video recorder systems.

MC1733/MC1733C — Video Amplifier

Differential input and output amplifier provides three fixed gain options with bandwidth to 120 MHz. External resistor permits any gain setting from 10 to 400 v/v. Extremely fast rise time (2.5 ns typ) and propagation delay time (3.6 ns typ) makes this unit particularly useful as pulse amplifier in tape, drum, or disc memory read applications.

AGC Amplifiers

MC1545/MC1445 — Gated 2-Channel Input

Differential input and output amplifier with gated 2-channel input for a wide variety of switching purposes. Typical 75 MHz bandwidth makes it suitable for high-frequency applications such as video switching, FSK circuits, multiplexers, etc. Gating circuit is useful for AGC control.

MC1590 — Wide-Band General Purpose

Has differential inputs and outputs with unneutralized power gain as high as 35 dB typical at 100 MHz in tuned amplifier service. Effective AGC voltage range from 5 to 7 volts for a 30 dB gain reduction.

Voltage Regulators

Fixed Output Voltage Regulators

- Low-cost monolithic circuits for positive and/or negative regulation at currents from 100 mA to 3.0 A
- Ideal for on-card regulation of subsystems
- Internal current limiting thermal shutdown and safe-area compensation

Fixed/Voltage, 3-Terminal Regulators for Positive or Negative Polarity Power Supplies

Input Voltage, 5-Terminal Regulators for Positive or Negative Polarity Power Supplies									
V _{out} Volts	Tol.† Volts	I _O mA Max	Device Positive Output	Device Negative Output	V _{in} Min/Max	Regline mV	Regload mV	ΔV _O /ΔT mV/°C Typ	Case
2	± 0.1	1500	—	MC7902C	5.5/35	40	120	1.0	1, 221A
3	± 0.15	100	—	MC79L03AC	4.7/30	60	72	—	29, 79
	± 0.3			MC79L03C		80			
5	± 0.5	100	MC78L05C	MC79L05C	6.7/30	200	60	—	29, 79
	± 0.25		MC78L05AC	MC79L05AC		150			
		500	MC78M05C	MC79M05C	7/35	100	100	1.0	79, 221A
	± 0.4	1500	LM109	—		50		1.1	1, 79
			LM209	—	1.0				
	± 0.25		LM309	—					
	± 0.35		MC7805*	—	8.0/35	100	0.6	1	
	± 0.25		MC7805B#	—	8/35		1.0	1, 221A	
			MC7805C	MC7905C	7/35	10	50	0.6	1
	± 0.2		MC7805A*	—	7.5/35				
			MC7805AC	MC7905AC			100		1, 221A
	± 0.25		LM140-5*	—	7.0/35	50	50		1
	± 0.2		LM140A-5*	—		10	25		1, 221A
	± 0.25		LM340-5	—		50	50		
	± 0.2		LM340A-5	—		10	25		
	± 0.1		TL780-05C	—	7.0/35	5.0	25	0.06	221A
	± 0.25	3000	MC78T05*	—	7.3/35	25	30	0.1	1
			MC78T05C	—					1, 221A
	± 0.2		MC78T05A*	—		10	25	1	
			MC78T05AC	—				1, 221A	
	± 0.4		LM123*	—	7.5/20	25	100	1	
			LM223	—					
	± 0.25		LM323	—				221A	
	± 0.2		LM123A	—		15	50	1	
			LM223A	—					
			LM323A	—					
5.2	± 0.26	1500	—	MC7905.2C	7.2/35	105	105	1.0	1, 221A
6	± 0.3	500	MC78M06C	—	8/35	100	120	1.0	79, 221A
	± 0.35	1500	MC7806*	—	9/35	60	100	0.7	1
	± 0.3		MC7806B#	—	9/35	120	120	1, 221A	
			MC7806C	MC7906C	8/35				
	± 0.24		MC7806A*	—	8.6/35	11	50	1	
			MC7806AC	—			100	1, 221A	
	± 0.3		LM140-6*	—	8/35	60	60	1	
			LM340-6	—				1, 221A	
	3000	MC78T06*	—	8.3/35	30	30	0.12	1	
		MC78T06C	—					1, 221A	

#T_J = -40 to +125°C

†Output Voltage Tolerance for Worst Case

*T_J = -55 to +150°C

(continued)

Fixed Output Voltage Regulators (continued)

V _{out} Volts	Tol.† Volts	I _o mA Max	Device Positive Output	Device Negative Output	V _{in} Min/Max	Regline mV	Regload mV	ΔV _O /ΔT mV/°C Typ	Case	
8	± 0.8	100	MC78L08C	—	9.7/30	200	80	—	29, 79	
			MC78L08AC	—		175				
	± 0.4	500	MC78M08C	—	10/35	100	160	1.0	79, 221A	
			MC7808*	—	11.5/35	80	100		1	
		1500	MC7808B#	—	11.5/35	160	160		1, 221A	
			MC7808C	MC7908C	10.5/35					
	± 0.3		MC7808A*	—	10.6/35	13	50		1	
			MC7808AC	—			100		1, 221A	
	± 0.4		LM140-8*	—	10.5/35	80	80		1	
			LM340-8	—					1, 221A	
3000			MC78T08*	—	10.4/35	35	30		0.16	1
			MC78T08C	—						1, 221A
12	± 1.2	100	MC78L12C	MC79L12C	13.7/35	250	100	—	29, 79	
	± 0.6		MC78L12AC	MC79L12AC						
	± 0.6	500	MC78M12C	MC79M12C	14/35	100	240	1.0	79, 221A	
			MC7812*	—	15.5/35	120	120		1	
		1500	MC7812B#	—		240	240		1, 221A	
			MC7812C	MC7912C	14.5/35					
	± 0.5		MC7812A*	—	14.8/35	18	50		1	
			MC7812AC	—			100		1, 221A	
	± 0.6		LM140-12*	—	14.5/35	120	120	1.5	1	
	± 0.5		LM140A-12*	—		18	32			
	± 0.6		LM340-12	—		120	120		1, 221A	
	± 0.5		LM340A-12	—		18	32			
	± 0.24	3000	TL780-12C	—	14.5/35	5.0		0.15	221A	
	± 0.6		MC78T12*	—		45	30		1	
	± 0.5		MC78T12C	—					1, 221A	
			MC78T12A*	—		18	25		1	
			MC78T12AC	—					1, 221A	
15	± 1.5	100	MC78L15C	MC78L15C	16.7/35	300	150	—	29, 79	
	± 0.75		MC78L15AC	MC78L15A						
	± 0.75	500	MC78M15C	MC79M15C	17/35	100	300	1.0	79, 221A	
			MC7815*	—	18.5/35	150	150		1	
		1500	MC7815B#	—		300	300		1, 221A	
			MC7815C	MC7915C	17.5/35					
	± 0.6		MC7815A*	—	17.9/35	22	50		1	
			MC7815AC	—			100		1, 221A	
	± 0.75		LM140-15*	—	17.5/35	150	150		1	
	± 0.6		LM140A-15*	—		22	35			
	± 0.75		LM340-15	—		150	150		1, 221A	
	± 0.6		LM340A-15	—		22	35			
	± 0.3	3000	TL780-15C	—	17.5/40	15	60	0.18	221A	
	± 0.75		MC78T15*	—		55	30		1	
	± 0.6		MC78T15C	—					1, 221A	
			MC78T15A* *	—		22	25		1	
			MC78T15AC	—					1, 221A	

#T_J = -40 to +125°C

*T_J = -55 to +150°C

†Output Voltage Tolerance for Worst Case

Fixed Output Voltage Regulators (continued)

V _{out} Volts	Tol.† Volts	I _O mA Max	Device Positive Output	Device Negative Output	V _{in} Min/Max	Regline mV	Regload mV	ΔV _O /ΔT mV/°C Typ	Case	
18	± 1.8	100	MC78L18C	MC79L18C	19.7/35	325	170	—	29, 79	
	± 0.9		MC78L18AC	MC79L18AC						
	± 0.7		500	MC78M18C	—	20/35	100	360	1.0	79, 221A
			1500	MC7818*	—	22/35	180	180	2.3	1
		MC7818B#		—	360		360	1, 221A		
		± 0.7	MC7818C	MC7918C	21/35	31	50	1		
	MC7818A*		—	100			1, 221A			
	MC7818AC		—							
	± 0.9		LM140-18*	—		180	180		1	
			LM340-18	—					1, 221A	
		3000	MC78T18*	—	20.6/40	80	30	0.36	1	
			MC78T18C	—					1, 221A	
20	± 1.0	500	MC78M20C	—	22/40	10	400	1.1	79, 221A	
24	± 2.4	100	MC78L24C	MC79L24C	25.7/40	350	200	—	29, 79	
			MC78L24AC	MC79L24AC		300				
	± 1.2	500	MC78M24C	—	26/40	100	480	1.2	79, 221A	
		1500	MC7824*	—	28/40	240	240	3.0	1	
			MC7824B#	—		480	480		1, 221A	
			MC7824C	MC7924C	27/40					
	± 1.0	MC7824A*	—	27.3/40	36	50	1			
		MC7824AC	—			100	1, 221A			
		± 1.2	LM140-24*			—	240	240	1	
	LM340-24		—	1, 221A						
	3000		MC78T24*	—	26.7/40	90			30	0.48
	MC78T24C	—	1, 221A							

Adjustable Output Voltage Regulators

Positive Output Regulators

I _O mA Max	Device	S u f f i x	V _{out} Volts		V _{in} Volts		V _{in} — V _{out} Differ- ential Volts Min	P _D Watts Max		Regulation % V _{out} @ T _A = 25°C Max		T _C V _{out} Typ %/°C	T _J = °C Max	Case
			Min	Max	Min	Max		T _A = 25°C	T _C = 25°C	Line	Load			
100	LM317L	H,Z	1.2	37	5.0	40	3.0	Internally Limited		0.04	0.5	0.006	125	29, 79
	LM217L#									0.02	0.3	0.004	150	
	LM117L*											0.003		
150	MC1723	CP	2.0	37	9.5	40	3.0	1.25	—	0.1	0.3	0.003	150	646
		CG						1.0	2.1			0.003		603C
		G										0.002		
		CL						1.5	—			0.003	175	632
		L							—			0.002		
		CD						1.25	—			0.003	150	751A
250	MC1469	G	2.5	32	9.0	35	3.0	0.68	1.8	0.03	0.13	0.002	150	603
	MC1569			37	8.5	40	2.7			0.015				

#T_J = -40 to +125°C

*T_J = -55 to +150°C

**T_J = -25 to +150°C

(continued)

Adjustable Output Voltage Regulators (continued)

Positive Output Regulators

I _O mA Max	Device	S u f f i x	V _{out} Volts		V _{in} Volts		V _{in} — V _{out} Differ- ential Volts Min	P _D Watts Max		Regulation % V _{out} @ T _A = 25°C Max		TC V _{out} Typ %/°C	T _J = °C Max	Case
			Min	Max	Min	Max		T _A = 25°C	T _C = 25°C	Line	Load			
500	LM317M	T	1.2	37	5.0	40	3.0	Internally Limited		0.04	0.5	0.0056	125	221A
	LM317M	R												80
	LM217M#									0.02	0.3	0.004	150	
	LM117M*											0.0036		
600	MC1469	R	2.5	32	9.0	35	3.0	3.0	14.0	0.03	0.05	0.002	150	614
	MC1569			37	8.5	40	2.7			0.015				
1500	LM317	T	1.2	37	5.0	40	3.0	Internally Limited		0.04	0.5	0.006	125	221A
	LM317	H, K												79, 1
	LM217#											0.004		
	LM117*									0.02	0.3	0.003	150	
3000	LM350	T	1.2	33	5.0	36	3.0	Internally Limited		0.03	0.5	0.008	125	221A
	LM350	K												1
	LM250#									0.01	0.3	0.0057	150	
	LM150*											0.0051		

#T_J = -25 to +150°C

*T_J = -55 to +150°C

Negative Output Regulators

I _O mA Max	Device	S u f f i x	V _{out} Volts		V _{in} Volts		V _{in} — V _{out} Differ- ential Volts Min	P _D Watts Max		Regulation % V _{out} @ T _A = 25°C Max		TC V _{out} Typ %/°C	T _J = °C Max	Case
			Min	Max	Min	Max		T _A = 25°C	T _C = 25°C	Line	Load			
250	MC1463	G	-3.8	-32	9.0	35	3.0	0.68	1.8	0.03	0.05	0.002	150	603
	MC1563		-3.6	-33	8.5	40	2.7			0.015	0.13			
500	LM337M	T	-1.2	-37	5.0	40	3.0	Internally Limited		0.04	1.0	0.0048	125	221A
	LM337M													
	LM237M#	R								0.02	0.5	0.0034	150	80
	LM137M*											0.0031		
600	MC1463	R	-3.8	-34	9.0	35	3.0	2.4	9.0	0.03	0.05	0.002	175	614
	MC1563		-3.6	-37	8.5	40	2.7			0.015				
1500	LM337	T	-1.2	-37	5.0	40	3.0	Internally Limited		0.04	1.0	0.0048	125	221A
	LM337	H, K												79, 1
	LM237#									0.02	0.5	0.0034	150	
	LM137*											0.0031		

#T_J = -25 to +150°C

*T_J = -55 to +150°C

Switching Regulators

Used as the control circuit in PWM, push-pull, bridge and series type switchmode supplies. The devices include the reference, oscillator, pulse-width modulator, phase splitter and output sections. Frequency and duty cycle are independently adjustable.

I _O mA Max	V _{CC} Volts		f _o kHz		Device	Suffix	T _A °C	Case
	Min	Max	Min	Max				
40	1	30	2.0	100	MC3420	P	0 to +70	648
						L		620
					MC3520	L	-55 to +125	620
250*	7.0	40	1.0	300	MC34060	P	0 to +70	646
						L		632
					MC35060	L	-55 to +125	632
250	7.0	40	1.0	300	TL494	CN	0 to +70	648
						CJ		620
						IN	-25 to +85	648
						IJ		620
						MJ	-55 to +125	620
250		>40	1.0	300	TL495**	CN	0 to +70	707
						CJ		726
						IN	-25 to +85	707
						IJ	-25 to +85	726
±400	8	40	0.1	400	SG3525A	N	0° to +70	648
					SG3525A	J	0 to +70	620
					SG2525A	N	-40 to +85	648
					SG2525A	J		620
					SG1525A	J	-55 to +125	620
±400	8	40	0.1	400	SG3527A	N	0 to +70	648
					SG3527A	J		620
					SG2527A	N	-40 to +85	648
					SG2527A	J		620
					SG1527A	J	-55 to +125	620
±200	8	40	0.001	400	SG3526	N	0 to +70	707
					SG3526	J		726
					SG2526	N	-40 to +85	707
					SG2526	J		726
					SG1526	J	-55 to +125	726
1500*	2.5	40	0.1	100	μA78S40	PC	0 to +70	648
					μA78S40	DC		620
					μA78S40	DM	-55 to +125	
1500*	2.5	40	0.1	100	MC34063	PI	0 to +70	626
					MC34063	U		693
					MC33063	PI	-40 to +85	626
					MC33063	U		693
					MC35063	U	-55 to +125	693
1500*	8	20	20	70	TDA4600	—	-15 to +85	707,762

*Single output device

**Internal 39 V zener for >40 volt operation

Special Regulators

Floating Voltage and Current Regulators

Designed for laboratory type power supplies. Voltage is limited only by the break down voltage of associated, external, series-pass transistors.

V _{out} Volts		I _O mA	Device	S u f f i x	V _{aux} Volts		P _D Watts Max	$\Delta V_{ref}/V_{ref}$ %		$\Delta I_L/L_L$ % Max	TC V _{out} %/°C Typ	Case
Min	Max	Max			Min	Max		Line	Load			
0	*	*	MC1466	L	21	30	0.75	0.015	0.015	0.2	0.001	632
			MC1566	L	20	35		0.004	0.004	0.1	0.006	

*Dependent on characteristics of external series-pass elements.

Dual ± 15 V Tracking Regulators

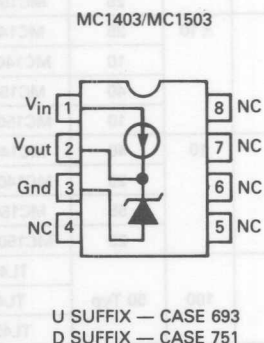
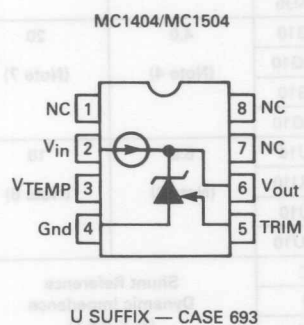
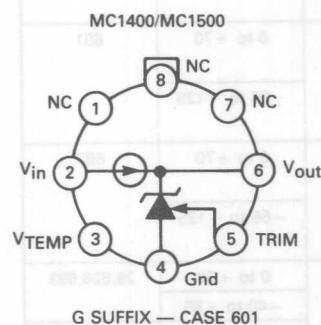
Internally, the device is set for ± 15 V, but an external adjustment can change both outputs simultaneously, from 8.0 V to 20 V.

V _{out} Volts		I _O mA Max	V _{in} Volts		Device	S u f f i x	P _D Watts Max	Regline mV	Regload mV	TC %/°C (T _{low} to T _{high}) Typ	T _A °C	Case
Min	Max		Min	Max								
14.8	15.2	± 100	17	30	MC1468	G	0.8	10	10	3.0	0 to +75	603C
						L	1.0					632
						R	2.4					614
					MC1568	G	0.8				-55 to +125	603C
						L	1.0					632
						R	2.4					614

Voltage References

Precision Low-Voltage References

A family of precision low-voltage bandgap voltage reference, these devices are designed for applications requiring low temperature drift.



Vout Volts Typ	IO mA Max	ΔVout/ΔT ppm/°C Max	Device	Regline mV Max	Regload mV Max	TA °C	Case
1.235 ± 12 mV	20	20 Typ	LM385BZ-1.2	(Note 1)	1.0 (Note 2)	0 to +70	29
1.235 ± 25 mV			LM285Z-1.2			-40 to +85	
			LM385Z-1.2			0 to +70	
2.5 ± 38 mV			LM385BZ-2.5		2.0 (Note 3)	-40 to +85	
2.5 ± 75 mV						LM285Z-2.5	
2.5 ± 5.0 mV	± 10	25	MC1400G2	3.0	10	0 to +70	601
		10	MC1400AG2	(Note 4)	(Note 7)		
		40	MC1500G2			-55 to +125	
		10	MC1500AG2				
2.5 ± 25 mV	10	40	MC1403	3.0/4.5	10	0 to +70	693,79,751
		25	MC1403A	(Note 5)	(Note 8)		693, 79
		55	MC1503			-55 to +125	
		25	MC1503A				
5.0 ± 10 mV	± 10	25	MC1400G5	4.0	20	0 to +70	693
		10	MC1400AG5	(Note 4)	(Note 7)		
		40	MC1500G5			-55 to +125	
		10	MC1500AG5				
5.0 ± 50 mV	10	40	MC1404U5	6.0	10	0 to +70	
		25	MC1404AU5	(Note 6)	(Note 8)		
		55	MC1504U5			-55 to +125	
		25	MC1504AU5				
6.25 ± 10 mV	± 10	25	MC1400G6	4.0	20	0 to +70	601
		10	MC1400AG6	(Note 4)	(Note 7)		
		40	MC1500G6			-55 to +125	
		10	MC1500AG6				

(continued)

Precision Low-Voltage References (Continued)

V _{out} Volts Typ	I _O mA Max	ΔV _{out} /ΔT ppm/°C Max	Device	Regline mV Max	Regload mV Max	T _A °C	Case
6.25 ± 60 mV	10	40	MC1404U6	6.0	10	0 to +70	693
		25	MC1404AU6	(Note 6)	(Note 8)	-55 to +125	
		55	MC1504U6				
		25	MC1504AU6				
10 ± 20 mV	±10	25	MC1400G10	4.0 (Note 4)	20 (Note 7)	0 to +70	601
		10	MC1400AG10			-55 to +125	
		40	MC1500G10				
		10	MC1500AG10				
10 ± 100 mV	10	40	MC1404U10	6.0 (Note 6)	10 (Note 8)	0 to +70	693
		25	MC1404AU10			-55 to +125	
		55	MC1504U10				
		25	MC1504AU10				
2.5 to 37	100	50 Typ	TL431C	Shunt Reference Dynamic Impedance (z) ≤ 0.5 Ω		0 to +70	29,626,693
			TL431I			-40 to +85	693
			TL431M			-55 to +125	

Notes:

1. Micro-Power Reference Diode Dynamic Impedance (z) ≤ 1.0 Ω at I_R = 100 μA
2. 10 μA ≤ I_R ≤ 1.0 mA
3. 20 μA ≤ I_R ≤ 1.0 mA
4. (V_{out} + 1.0 V) ≤ V_{in} ≤ 40 V

5. 4.5 V ≤ V_{in} ≤ 15 V/15 V ≤ V_{in} ≤ 40 V
6. (V_{out} + 2.5 V) ≤ V_{in} ≤ 40 V
7. -10 mA ≤ I_L ≤ +10 mA
8. 0 mA ≤ I_L ≤ 10 mA

Motor Control Circuits

Device	I _{cc}	I _{out}	Soft Start	Firing Quadrant	Features	Package	Pins	Case
TDA 1085C	4.2mA	150mA	X	1-4	Motor current limiting Firing pulse repetition if triac fails Feed back with Hall effect IC	Plastic	14	648,751
TDA1185A	1.0mA	min80mA	X	2-3		Plastic	14	646,751
TDA1285A	4.5mA	min45mA	X	1-4		Plastic	16	648,751

Zero Voltage Switches

Device	I _{cc}	I _{out}	V _{io}	Features	Package	Pins	Case
UAA1004DP	1.9mA	min80mA	±10mV	Built-in Hysteresis — Sensor fail protection Burst control — Sensor fail protection	Plastic	8	626
UAA1016B	1.5mA	min80mA typ50mA	± 5mV		Plastic	8	626,751

Stepper Motor Drivers

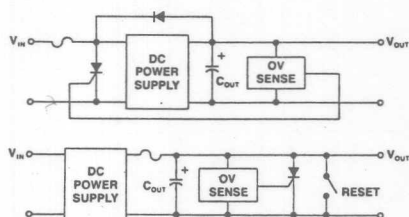
Device	V _{cc}	V _m	I _m	Features	Package	Pins	Case
SAA1042	20V	12V	0.5A	Half/Full Step Operation Clockwise/Counter Clockwise Operation MOS — TTL — DTL Compatible	Plastic	12	721
SAA1042A	20V	24V	0.5A		Plastic	12	721

Power supply supervisory circuits

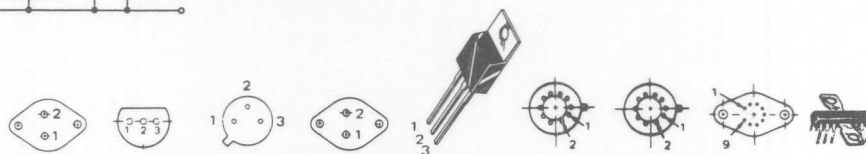
Selector Guide

TYPE	Operating Voltage Range (V)		Typ. Drive Output Current (mA)	Sense trip Voltage (V)	Device Number	Suffix	Ta °C	Case
	Min.	Max.						
OVP	4.5	40	300	2.6 ± 5%	MC3423	P1	0 to 70	626
						U		693
					MC3523	U	-55 to 125	693
Universal OUV	4.5	40	350	2.5 ± 4% ± 1%	MC3424,A	P	0 to 70	648
						L		620
					MC3324,A	P	-40 to 85	648
						L		620
					MC3524,A	L	-55 to 125	620
OUVP	4.5	40	300	2.5 ± 4% ± 1%	MC3425,A	P1	0 to 70	626
						U		693
					MC3525,A	U	-55 to 125	693
3 Term OVP	3.0	40	200	2.5 ± 2% ± 1%	MC34061,A	P	0 to 70	29
						P1		626
						U		626
					MC35061,A	U	-55 to 125	693
Pin Program OVP	3.0	40	200	2.5 ± 3%	MC34062	P1	0 to 70	626
						U		693
					MC35062	U	-55 to 125	693

TYPICAL CROWBAR OVP CIRCUIT CONFIGURATIONS



Package Styles



CASE	1 (TO-3)	29 (TO-92)	79 (TO-39)	80 (TO-66)	221A (TO-220)	603 (TO-5 Type)	603C (TO-5 Type)	614	721
MATERIAL	Metal	Plastic	Metal	Metal	Plastic	Metal	Metal	Metal	Plastic
SUFFIX	SK, K, KC	P, Z	G, H	R	T	G, H	G	R	—

620	626	632 (TO-116)	646	648	693	707	726	751	751A	762
Ceramic	Plastic	Ceramic	Plastic	Plastic	Ceramic	Plastic	Ceramic	Plastic	Plastic	Plastic
J, L	P or P1	L	P or P2	N, P	U	N	J	D	D	—

Data Conversion

The Line of data conversion products which Motorola offers, span a wide spectrum of speed and resolution/accuracy. Features including bus compatibility minimize external parts count and provide easy interface to microprocessor systems. Various technologies such as ion implantation, thin-film, laser trimming and CMOS are utilized to achieve functional capability, accuracy and production repeatability.

A-D Converters

Resolution (Bits)	Device	Accuracy (Max)	Conversion Time	Input Voltage Range	Supplies (V)	Temperature Range †			Package	Technology	Comments
						M	I	C			
7	MC10315L	± ½ LSB	66 ns	1 to 2 V _{p-p}	+5.0, -5.2			●	24-Pin DIP	Bipolar	Video Speed Flash, ECL Logic Levels
7	MC10317L	± ½ LSB	66 ns	1 to 2 V _{p-p}	+5.0, ±5.2			●	24-Pin DIP	Bipolar	Video Speed Flash, Expandable to 8-Bits, ECL Logic Levels
8	*AM6108A	± ½ LSB	2.0 μs**	±5.0 V 0 to 5.0 V 0 to 10 V	+5.0, -5.2			●	28-Pin DIP	Bipolar	μP Compatible, Three-State Outputs, includes Reference
8	MC145040	± ½ LSB	50 μs**	0 to V _{DD}	+5.0, ±10%	▲			20-Pin DIP	CMOS	Requires External Clock
8	MC145041	± ½ LSB	50 μs**	0 to V _{DD}	+5.0, ±10%	▲			20-Pin DIP	CMOS	Includes Internal Clock
8	MC14442	± ½ LSB	32 μs	0 to V _{DD}	+5.0, ±10%	■			28-Pin DIP	CMOS	M68 μP Compatible 12-channel MUX S.A.R.
8	MC14444	± ½ LSB	32 μs	0 to V _{DD}	+5.0, ±10%	■			40-Pin DIP	CMOS	M68 μP Compatible 16-channel MUX S.A.R.
8-10	MC14443/47	± 0.3%	300 μs	Variable w/Supply	+5.0 to +18	■			16-Pin DIP	CMOS	μP Compatible, Single Slope, 6-channel MUX
3½ Digit	MC14433	± 0.05%	40 ms	±2.0 V ±200 mV	+5.0, +8.0	■			24-Pin DIP	CMOS	Dual Slope

□ Devices in shaded — Refer to CMOS Data Manual, Volume 2, Special Functions, for further information.

* To Be Introduced.

** Includes Data Transfer Time.

† Temperature Ranges:

M ● — Military (−55°C to +125°C)

I ● — Industrial (−25°C to +85°C)

I ■ — Automotive (−40°C to +85°C)

I ▲ — Automotive (−40°C to +125°C)

C ● — Commercial (0°C to +70°C)

D-A Converters

Resolution (Bits)	Part Number	Accuracy @ 25°C (Max)	Settling Time (± ½ LSB)	Internal Reference	Supplies (V)	Temperature Range †			Package	Technology	Comments
						M	I	C			
6	MC1406	± ½ LSB	300 ns	—	+5.0, -15			●	14-Pin DIP	Bipolar	Multiplying
6	MC144110	± 2.0%	—	—	+5.0 to +15			●	20-Pin DIP	CMOS	Serial input, HEX DAC, 6 outputs
6	MC144111	± 2.0%	—	—	+5.0 to +15			●	14-Pin DIP	CMOS	Serial input, Quad DAC, 4 outputs
8	DAC-08	± ½ LSB	150 ns	—	± 5.0 to ± 15	●			16-Pin DIP	Bipolar	High-speed multiplying
8	DAC-08A	± ¼ LSB	135 ns	—	± 5.0 to ± 15	●			16-Pin DIP	Bipolar	High-speed multiplying
8	DAC-08C	± 1 LSB	150 ns	—	± 5.0 to ± 15			●	16-Pin DIP	Bipolar	High-speed multiplying
8	DAC-08E	± ½ LSB	150 ns	—	± 5.0 to ± 15			●	16-Pin DIP	Bipolar	High-speed multiplying
8	DAC-08H	± ¼ LSB	135 ns	—	± 5.0 to ± 15			●	16-Pin DIP	Bipolar	High-speed multiplying
8	MC1408L6	± 2 LSB	300 ns Typ	—	+5.0, -15			●	16-Pin DIP	Bipolar	Multiplying X = Package letter (P, Lord)
8	MC1408L7	± 1 LSB	300 ns Typ	—	+5.0, -15			●	16-Pin DIP	Bipolar	Multiplying
8	MC1408L8	± ½ LSB	300 ns Typ	—	+5.0, -15			●	16-Pin DIP	Bipolar	Multiplying
8	MC1508L8	± ½ LSB	300 ns Typ	—	+5.0, -15	●			16-Pin DIP	Bipolar	Multiplying
8	MC6890	± ½ LSB	300 ns	2.5 V	± 5.0 to ± 15			●	20-Pin DIP	Bipolar Thin-Film	μP Compatible Double Buffered
8	MC6890A	± ½ LSB	300 ns	2.5 V	± 5.0 to ± 15	●			20-Pin DIP	Bipolar Thin-Film	Includes Application Resistors

Devices in shaded — Refer to CMOS Data Manual, Volume 2, Special Functions, for further information.

(continued)

† Temperature Ranges:

- M ● — Military (–55°C to +125°C)
- I ● — Industrial (–25°C to +85°C)
- I ■ — Automotive (–40°C to +85°C)
- I ▲ — Automotive (–40°C to +125°C)
- C ● — Commercial (0°C to +70°C)

D-A Converters (continued)

Resolution (Bits)	Part Number	Accuracy @ 25°C (Max)	Settling Time ($\pm 1/2$ LSB)	Internal Reference	Supplies (V)	Temperature Range †			Package	Technology	Comments
						M	I	C			
8	MC10318CL6	± 2 LSB	10 ns Typ	—	– 5.2			•	16-Pin DIP	Bipolar ECL	ECL input Logic Levels
8	MC10318CL7	± 1 LSB	10 ns Typ	—	– 5.2			•	16-Pin DIP	Bipolar ECL	ECL input Logic Levels
8	MC10318L	$\pm 1/2$ LSB	10 ns Typ	—	– 5.2			•	16-Pin DIP	Bipolar ECL	ECL input Logic Levels
8	MC10318L9	$\pm 1/4$ LSB	10 ns Typ	—	– 5.2			•	16-Pin DIP	Bipolar ECL	ECL input Logic Levels
10	MC3410	$\pm 1/2$ LSB	250 ns Typ	—	+ 5.0, – 15			•	16-Pin DIP	Bipolar	Multiplying
10	MC3410C	± 1 LSB	250 ns Typ	—	+ 5.0, – 15			•	16-Pin DIP	Bipolar	Multiplying
10	MC3510	$\pm 1/2$ LSB	250 ns Typ	—	+ 5.0, – 15	•			16-Pin DIP	Bipolar	Multiplying
12	AD562A	$\pm 1/2$ LSB	1.0 μ s	—	+ 15, – 15		•		24-Pin DIP	Bipolar Thin-Film	Multiplying, includes Applications Resistors
12	AD562K	$\pm 1/2$ LSB	1.0 μ s	—	+ 15, – 15			•	24-Pin DIP	Bipolar Thin-Film	Multiplying, includes Applications Resistors
12	AD562S	$\pm 1/4$ LSB	1.0 μ s	—	+ 15, – 15	•			24-Pin DIP	Bipolar Thin-Film	Multiplying, includes Applications Resistors
12	AD563J	$\pm 1/2$ LSB	1.2 μ s	2.5 V	+ 5.0, – 15			•	24-Pin DIP	Bipolar Thin-Film	Includes Applications Resistors
12	AD563K	$\pm 1/4$ LSB	1.2 μ s	2.5 V	+ 5.0, – 15			•	24-Pin DIP	Bipolar Thin-Film	Includes Applications Resistors
12	AD563S	$\pm 1/4$ LSB	1.2 μ s	2.5 V	+ 5.0, – 15	•			24-Pin DIP	Bipolar Thin-Film	Includes Applications Resistors
12	AD563T	$\pm 1/4$ LSB	1.2 μ s	2.5 V	+ 5.0, – 15	•			24-Pin DIP	Bipolar Thin-Film	Includes Applications Resistors
12	MC3412	$\pm 1/2$ LSB	400 ns	10 V	+ 15, – 15			•	24-Pin DIP	Bipolar Thin-Film	High-speed, includes Applications Resistors
12	MC3512	$\pm 1/2$ LSB	400 ns	10 V	+ 15, – 15	•			24-Pin DIP	Bipolar Thin-Film	High-speed, includes Applications Resistors

† Temperature Ranges:

- M • — Military (– 55°C to + 125°C)
- I • — Industrial (– 25°C to + 85°C)
- I ■ — Automotive (– 40°C to + 85°C)
- I ▲ — Automotive (– 40°C to + 125°C)
- C • — Commercial (0°C to + 70°C)

Bus Interface

Microprocessor Bus

This family of devices is designed to extend the limited drive capabilities of today's standard microprocessors. All devices are fabricated with Schottky TTL technology for high speed.

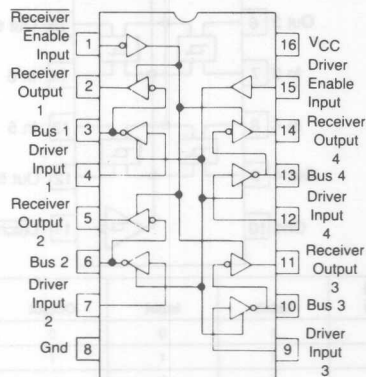
General features include:

- Single +5.0 V Power Supply Requirement
- Three-State Logic Output
- Low Input Loading — 200 μ A Max.

DATA BUS EXTENDERS

Quad, Bidirectional, with 3-State Outputs

MC8T26A/MC6880A # * — Inverting

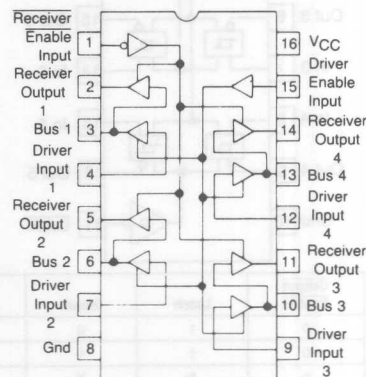


#These devices may be ordered by either of the paired numbers.

Both types:
 $T_A = 0$ to $+75^\circ\text{C}$

Packages:
L Suffix — Case 620
P Suffix — Case 648

MC8T28/MC6889 # * — Noninverting

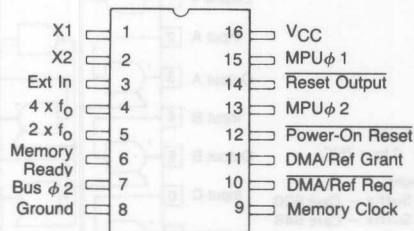


* Also available in extended or military temp. range

Device Number	Input Current		I_{OHL} Output Disabled Leakage Current — High Logic State $\mu\text{A Max}$	t_{PLH} , t_{PHL} Propagation Delay Time — High to Low or Low to High ns Max
	I_{IH} $\mu\text{A Max}$	I_{IL} $\mu\text{A Max}$		
MC8T26A/MC6880A	25	-200	100	14
MC8T28/MC6889	25	-200	100	17

M6800 CLOCK GENERATOR

MC6875/MC6875A — Provides the non-overlapping two-phase clock signals for M6800 MPU systems.



MC6875L — $T_A = 0$ to $+70^\circ\text{C}$

MC6875AL — $T_A = -55$ to $+125^\circ\text{C}$

Package:
L Suffix — Case 620

A-D/D-A CONVERTERS

(See Precision Circuits — Data Conversion)

MPU Bus Compatible

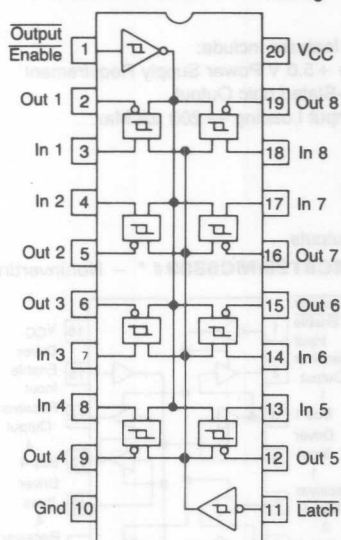
MC6890/MC6890A — Split Supply

Bus Interface (continued)

ADDRESS AND CONTROL BUS EXTENDERS

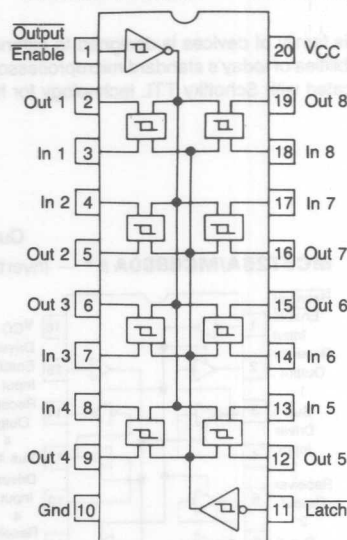
Octal, Buffer/Latch Unidirectional with 3-State Outputs

MC3482A/MC6882A# — Inverting



#These devices may be ordered by either of the paired numbers.

MC3482B/MC6882B# — Noninverting



All types:
 $T_A = 0$ to $+75^\circ\text{C}$

Packages:
L Suffix — Case 732

Output Enable	Latch	Input	Output
0	1	0	1
0	1	1	0
0	0	X	Q_0
1	X	X	Z

Output Enable	Latch	Input	Output
0	1	0	0
0	1	1	1
0	0	X	Q_0
1	X	X	Z

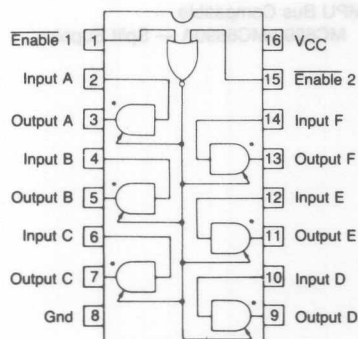
Device Number	V_{OL} @ $I_{OL} = 48$ mA Volts Max	V_{OH} @ $I_{OH} = -20$ mA Volts Min	I_{OS} mA Typ	t_{PHL} ns Typ
MC3482A/MC6882A	0.5	2.4	-80	8.0
MC3482B/MC6882B	0.5	2.4	-80	8.0

Hex, Unidirectional, with 3-State Outputs

MC8T95/MC6885#* — Noninverting

MC8T96/MC6886#* — Inverting

Two-input Enable controls all six buffers.

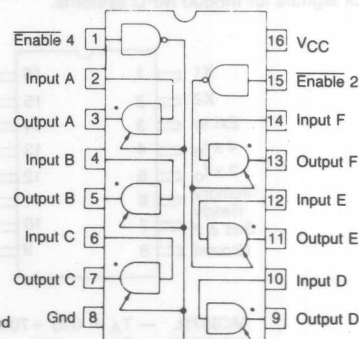


*Add inverter for MC6886/MC8T96.

MC8T97/MC6887#* — Noninverting

MC8T98/MC6888#* — Inverting

Two Enable inputs, one controlling four buffers and the other controlling the remaining two buffers.



*Add inverter for MC6888/MC8T98.

All four types:
 $T_A = 0$ to $+75^\circ\text{C}$

Packages:
L Suffix — Case 620
P Suffix — Case 648

* Also available in extended or military temp. range

V_{OL} @ $I_{OL} = 48$ mA Volts Max	V_{OH} @ $I_{OH} = -5.2$ mA Volts Min	I_{OS} mA Typ	t_{PLH} ns Typ	$t_{PZH/L(E)}$ ns Typ
0.5	2.4	-80	6.0	11/15

Bus Interface (continued)

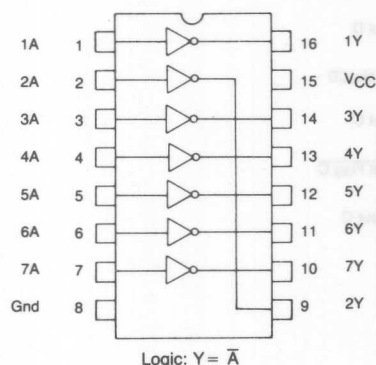
Computer Bus

NEW IBM 360/370 I/O INTERFACE

Line Receivers and Drivers designed to operate compatibly.
The MC75125/MC75127 Seven-Channel Receivers, MC75128/
MC75129 Eight-Channel Receivers, and the MC3481/MC3485
Drivers meet the new IBM System 360/370 I/O GA-22-6974-3
standard requirements.

SEVEN-CHANNEL LINE RECEIVERS

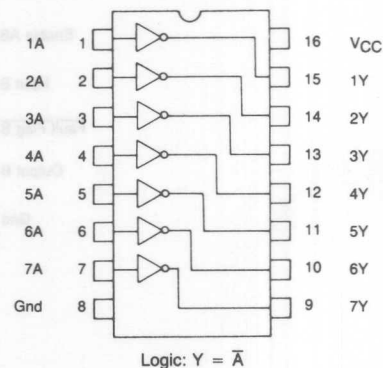
MC75125



All types:
 $T_A = 0$ to $+70^\circ\text{C}$

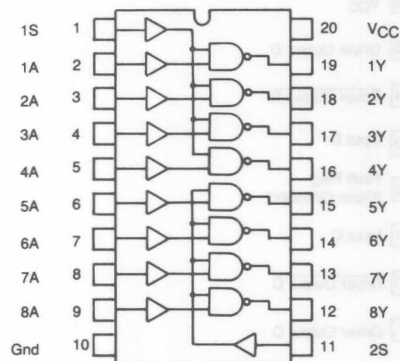
Packages:
L Suffix — Case 620
P Suffix — Case 648

MC75127 — Standard V_{CC} and Ground Pinouts.



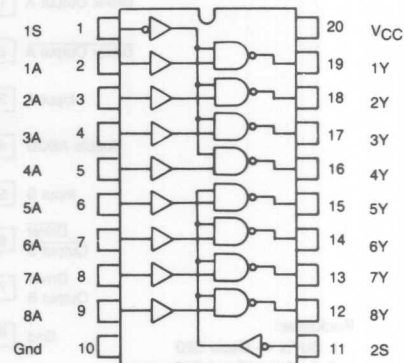
EIGHT-CHANNEL LINE RECEIVERS

MC75128 — Active-High Strobe



Packages:
L Suffix — Case 732
P Suffix — Case 738

MC75129 — Active-Low Strobe



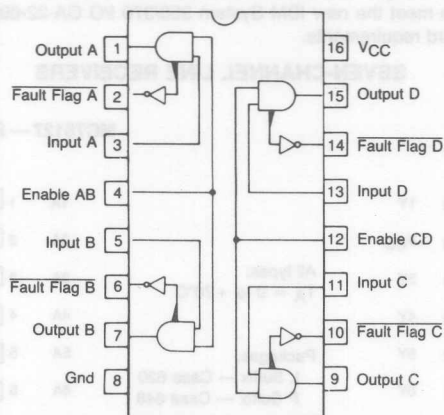
Device Number	Input Resistance $k\Omega$ Min/Max	$I_{IH}(R)$ @ $V_{IH} = 3.11$ V mA Max	t_{PLH} @ $C_L = 50$ pF ns Max
MC75125/75127	7.0/20	0.42	25
MC75128/75129	7.0/20	0.42	25

Bus Interface (continued)

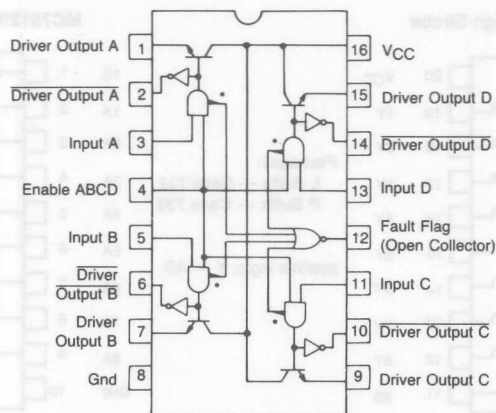
New IBM 360/370 I/O Interface (continued)

QUAD LINE DRIVERS

MC3481 — Open emitter driver with individual fault flags.



MC3485 — Open emitter driver with combined open collector fault flag and inverted outputs.



Packages:
 L Suffix — Case 620
 P Suffix — Case 648

Meets GA-22-6974-3

Device Number	V_{OH} @ $I_{OH} = -59.3 \text{ mA}$ Volts Min	I_{OS}^* @ $V_O = 0$ mA Max	t_{PLH} @ $C_L = 100 \text{ pF}$ ns Typ
MC3481/3485	3.11	-5.0	20

*Fault Protection

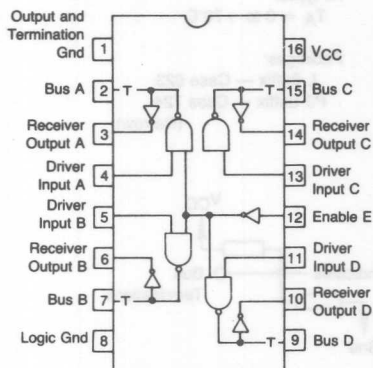
Bus Interface (continued)

Instrumentation Bus

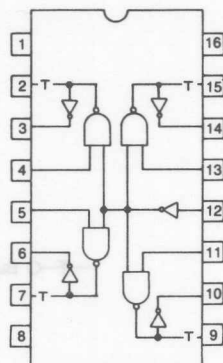
QUAD INTERFACE TRANSCEIVERS

These devices are designed to meet the GPIB bus specification of IEEE Standard 488-1978, for the interconnection of Measurement Apparatus.

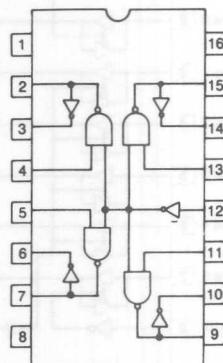
MC3440AP — Three drivers with common Enable input; one driver without Enable.



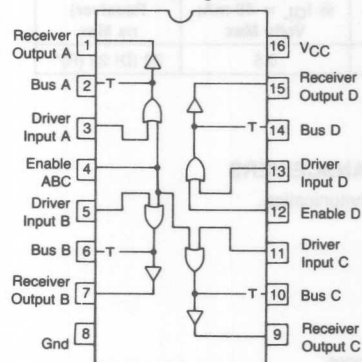
MC3441AP — Four drivers with common Enable input.



MC3443AP — Four drivers with common Enable input; no termination resistors.

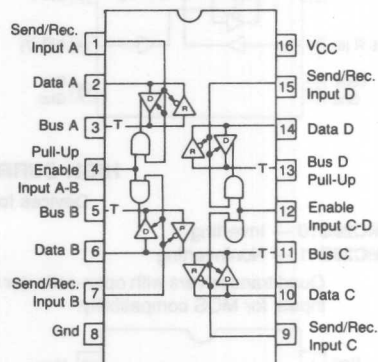


MC3446AP — For low-power instruments, including MOS.

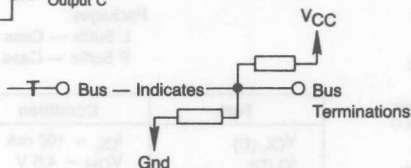


All types:
 $T_A = 0 \text{ to } +70^\circ\text{C}$

MC3448A — For common Send-Receive bus; bidirectional.



Packages:
L Suffix — Case 620
P Suffix — Case 648



Device Number	Receiver Input Hysteresis mV Min	Drive Output Voltage @ $I_{OL} = 48 \text{ mA}$; Volts Max	t_{PHL} (Driver or Receiver) ns Max
MC3440AP	400	0.5	30
MC3441AP	400	0.5	30
MC3443AP	400	0.5	25 (D) 22 (R)
MC3446AP	400	0.5	50 (D) 40 (R)
MC3448A	400	0.5	17 (D) 23 (R)

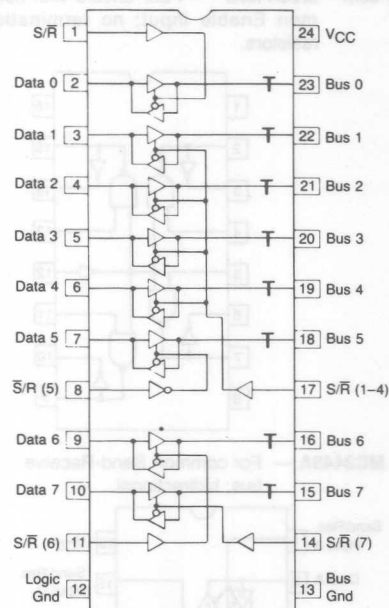
Bus Interface (continued)

Instrumentation Bus (continued)

OCTAL LOW-POWER INTERFACE TRANSCEIVER

These devices are designed to meet the GPIB bus specifications of IEEE Standard 488-1978, for the interconnection of Measurement Apparatus.

MC3447 — Open collector, 3-State outputs with terminations.



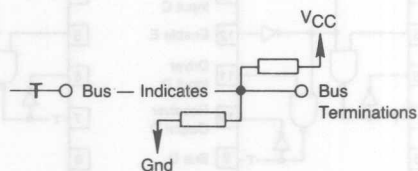
All types:

$T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:

L Suffix — Case 623

P3 Suffix — Case 724
(Narrow)



Device Number	Receiver Input Hysteresis mV Min	Drive Output Voltage @ $I_{OL} = 48 \text{ mA}$; Volts Max	t_{PHL} (Driver or Receiver) ns Max
MC3447	400	0.5	30 (D) 22 (R)*

*Fast Channel.

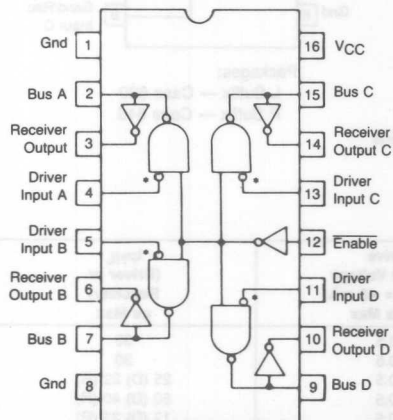
HIGH-CURRENT PARTY-LINE BUS TRANSCEIVERS

Devices for industrial control and data communication.

MC26S10 — Inverting

MC26S11 — Noninverting

Quad transceivers with open-collector drivers and PNP-buffered inputs for MOS compatibility.



Packages:

L Suffix — Case 620

P Suffix — Case 648

Test	Condition	Limits
V_{OL} (D)	$I_{OL} = 100 \text{ mA}$	0.8 Volts Max
I_O (D)	$V_{OH} = 4.5 \text{ V}$	100 μA Max
I_{O1} (D)	$V_{CC} = 0 \text{ V}$, $V_{OH} = 4.5 \text{ V}$	100 μA Max
I_{IH} (D)	$V_{IH} = 2.7 \text{ V}$	30 μA Max
I_{IL} (D)	$V_{IL} = 0.4 \text{ V}$	-0.54 mA Max
t_P (D)	MC26S10	15 ns Max
	MC26S11	19 ns Max
t_P (R)	Both Types	15 ns Max

*Inverter on MC26S11 only.

Memory Interface and Control

NMOS Memories to TTL Systems

MULTIPLEXED 16-PIN RAM CONTROL (For 4K, 16K, and 64K Dynamic Memories)

MC3480 — Memory Controller. Used with all three levels of RAM.

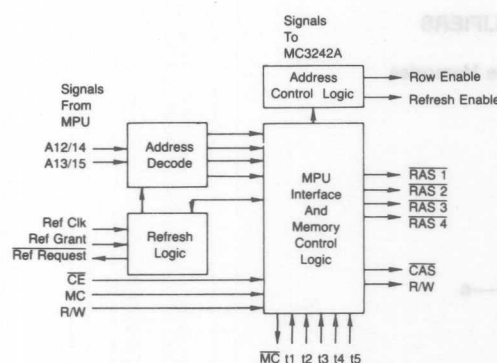
The memory controller chip is designed to greatly simplify the interface logic required to control popular 16-pin 4K, 16K, or 64K dynamic NMOS RAMs in a microprocessor system such as the M6800. The controller will generate, on command from the microprocessor, the proper RAS and timing signals required to successfully transfer data between the microprocessor and the NMOS memories. The controller, in conjunction with an oscillator, will also generate the necessary signals required to insure

that the dynamic memories are refreshed for the retention of data.

With Schottky TTL technology for high performance, and high input impedance for minimum loading of the MPU bus, the MC3480 reduces package count, and reduces system access/cycle times by 30%. The chip enable allows expansion to larger-word capacity.

Designed to interface directly with MC3242A address/multiplexers/refresh counter.

The MC3482A or B is recommended for multiplex function with 64K RAMs.

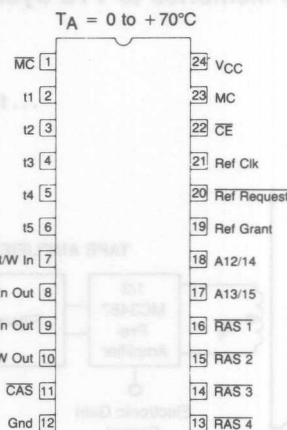


MC3242A — Designed for multiplexing 14 address lines into 7 for the 16-pin multiplexed 16K RAMs, while also containing a 7-bit refresh counter.

$T_A = 0 \text{ to } +75^\circ\text{C}$



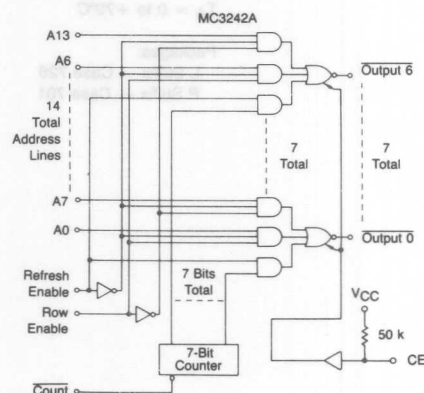
Packages:
L Suffix — Case 733
P Suffix — Case 710



Packages:
L Suffix — Case 623
P Suffix — Case 649

MC3242A — 7-Bit (16K RAM) Address Multiplexer/Refresh Counter

MC3482A/B — 8-Bit Address Multiplexer (See Microprocessor Bus Section)



Memory Interface and Control (continued)

BUS EXTENSION (See Microprocessor Bus)

Data Bus (Bidirectional) Extenders
 MC8T26A/MC6880A — Inverting
 MC8T28A/MC6889 — Noninverting

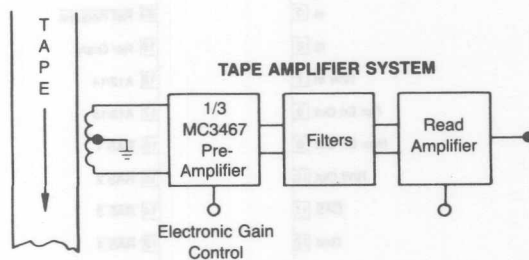
Address Bus (Unidirectional) Extenders
 MC8T95/MC6885 — Hex Noninverting
 MC8T96/MC6886 — Hex Inverting

MC8T97/MC6887 — Hex Noninverting
 MC8T98/MC6888 — Hex Inverting
 MC3482A/MC6882A — Octal Inverting
 MC3482B/MC6882B — Octal Noninverting

Magnetic Memories to TTL Systems

SENSE AMPLIFIERS

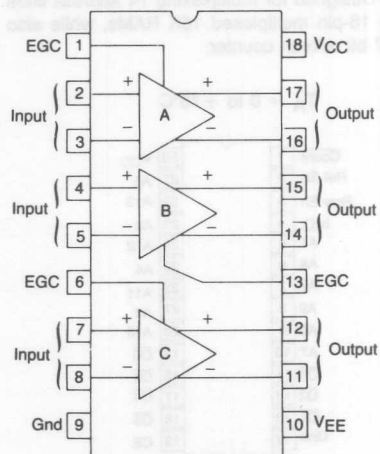
... for Magnetic Tape Memories



$T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:
 L Suffix — Case 726
 P Suffix — Case 701

MC3467 — Triple Preamplifier



Memory Interface and Control (continued)

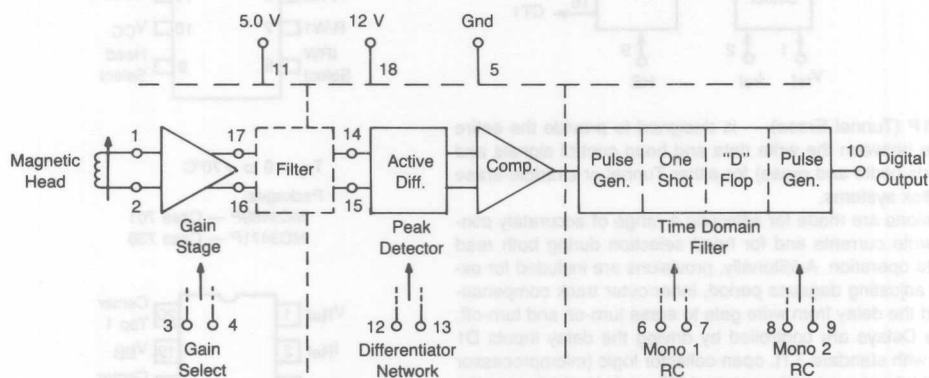
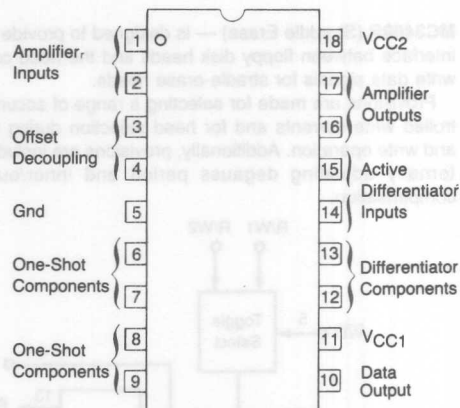
Magnetic Memories to TTL Systems (continued)

FLOPPY DISK READ AMPLIFIER SYSTEM

MC3470/MC3470A — Designed as monolithic READ Amplifier Systems for obtaining digital information from floppy disk storage. They are designed to accept the differential ac signal produced by the magnetic head and produce a digital output pulse that corresponds to each peak of the input signal. The gain stage amplifies the input waveform and applies it to an external filter network, enabling the active differentiator and time domain filter to produce the desired output. They combine all the active circuitry to perform the floppy disk READ amplifier function in one circuit, and are guaranteed to have a maximum peak shift of 5.0%, adjustable to zero, for the MC3470 and 2.0%, adjustable to zero, for the MC3470A.

$T_A = 0 \text{ to } +70^\circ\text{C}$

Package:
P Suffix — Case 701



Device Number	Peak Shift ($f = 250 \text{ kHz}$, $V_{ID} = 1.0 V_{pp}$)	Differential Input Voltage Gain ($f = 200 \text{ kHz}$, $V_{ID} = 5.0 \text{ mV [RMS]}$)		Input Common Mode Range (5% Max THD)	
		V/V		V	
	% Max	Min	Max	Min	Max
MC3470	5.0	80	130	-0.1	1.5
MC3470A	2.0	100	130		

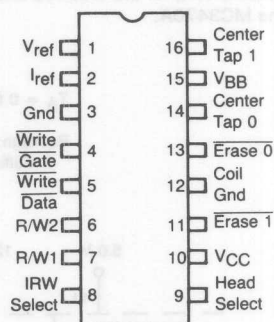
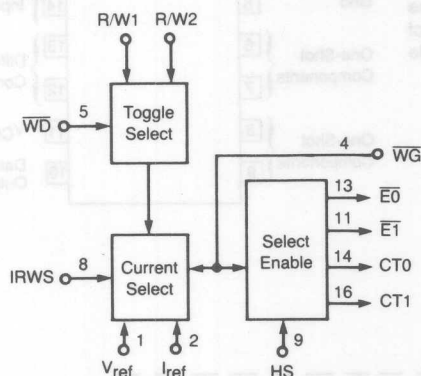
Memory Interface and Control (continued)

Magnetic Memories to TTL Systems (continued)

FLOPPY DISK WRITE CONTROLLER/HEAD DRIVER SYSTEMS

MC3469P (Straddle Erase) — is designed to provide the entire interface between floppy disk heads and the head control and write data signals for straddle-erase heads.

Provisions are made for selecting a range of accurately controlled write currents and for head selection during both read and write operation. Additionally, provisions are included for externally adjusting degauss period and inner/outer track compensation.

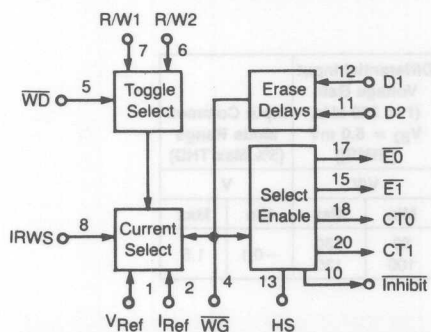


MC3471P (Tunnel Erase) — is designed to provide the entire interface between the write data and head control signals and the heads (write and erase) for either Tunnel or straddle-erase floppy disk systems.

Provisions are made for selecting a range of accurately controlled write currents and for head selection during both read and write operation. Additionally, provisions are included for externally adjusting degauss period, inner/outer track compensation, and the delay from write gate to erase turn-on and turn-off.

Erase Delays are controlled by driving the delay inputs D1 and D2 with standard TTL open-collector logic (microprocessor compatible) or by using the external RC mode in which case the delay is one τ (K factor = 1.0).

In addition, a Inhibit output is provided which indicates that the heads are active during write, degauss, or erase.

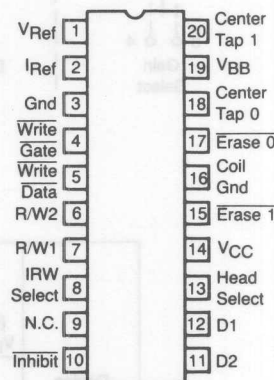


$T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:

MC3469P — Case 701

MC3471P — Case 738



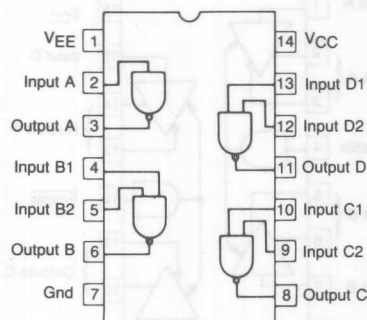
Line Drivers and Receivers for Computer/Terminal Applications

Voltage Mode

RS-232C SPECIFICATION

DRIVER

MC1488* — Quad; output current limiting.



Both devices:
 $T_A = 0 \text{ to } +75^\circ\text{C}$

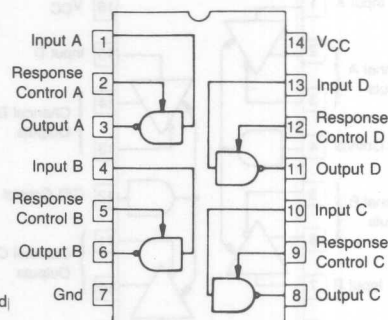
Package:
L Suffix — Case 632
P Suffix — Case 646

* Also available in extended or military temp. range

RECEIVERS

MC1489* — Quad; 0.25 V input hysteresis.

MC1489A — Quad; 1.1 V input hysteresis.



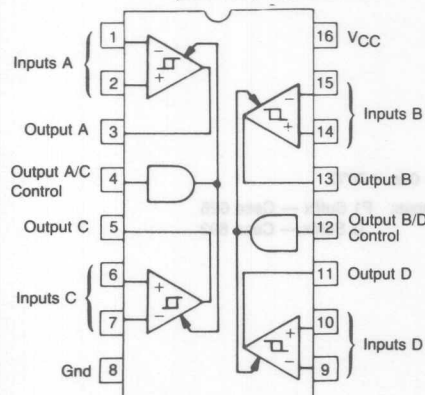
V_{OH} @ $V_{CC}/V_{EE} = \pm 9.0 \text{ V}$ Volts Min	V_{OL} @ $V_{CC}/V_{EE} = \pm 9.0 \text{ V}$ Volts Min	I_{OS} mA	t_{PHL} @ $C_L = 15 \text{ pF}$ ns Max
6.0	-6.0	$\pm 6.0 \text{ to } 12$	175

Device Number	Input V_{IHL} Volts	Input V_{ILH} Volts	t_{PHL} @ $R_L = 390 \Omega$ ns Max
MC1489	1.0 to 1.5	0.75 to 1.25	50
MC1489A	1.75 to 2.25	0.75 to 1.25	50

RS-422/423 SPECIFICATION

RECEIVERS

MC3486* — Quad; three-state outputs and input hysteresis, RS-422/423

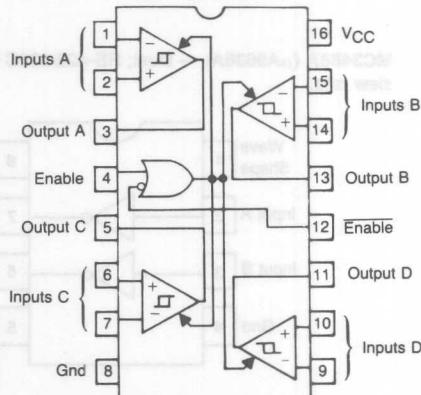


Both devices:
 $T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:
L Suffix — Case 620
P Suffix — Case 648

$V_{TH(D)}$ @ $V_{ICM} = \pm 7.0 \text{ V}$ Volts Max	I_{IB} @ $V_{I(D)} = \pm 10 \text{ V}$ $V_{CC} = 0 \text{ to } 5.25 \text{ V}$ mA Max	t_{PHL}/t_{PLH} ns Typ	$t_{p(\text{Control})}$ ns Typ
± 0.2	± 3.25	20/25	25

AM26LS32 — Quad; three-state outputs and input hysteresis



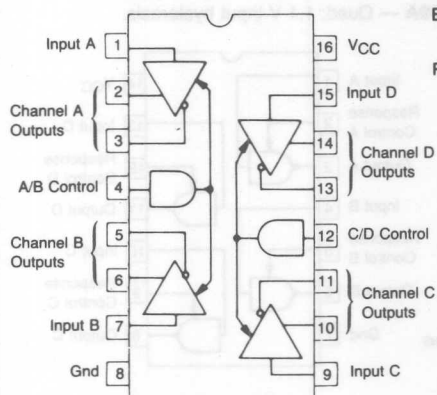
* Also available in extended or military temp. range

Line Drivers and Receivers for Computer/Terminal Applications (continued)

RS-422/423 Specification (continued)

DRIVERS

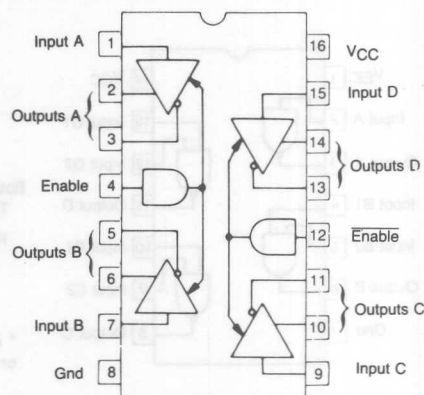
MC3487* — Quad; three-state outputs, RS-422



Both devices:
 $T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:
L Suffix — Case 620
P Suffix — Case 648

AM26LS31 — Quad; three-state outputs, RS-422

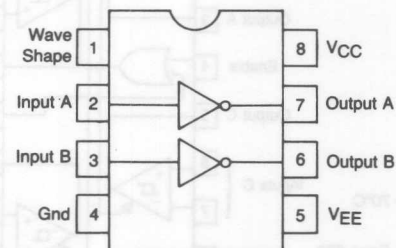


* Also available in extended or military temp. range

Device Number	V_{OH} @ $I_{OH} = -20 \text{ mA}$ Volts Min	V_{OL} @ $I_{OL} = 48 \text{ mA}$ Volts Max	V_{OD} (Differential) @ $R_L = 100 \Omega$ Volts Min	t_{PLH} & t_{PHL} ns Max
MC3487	2.5	0.5	2.0	20
AM26LS31	2.5	0.5	*	20

*Not guaranteed.

MC3488A (μA9636A) — Dual; RS-423/232C with adjustable slew rate.



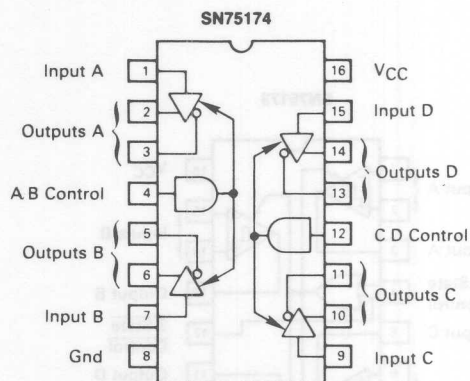
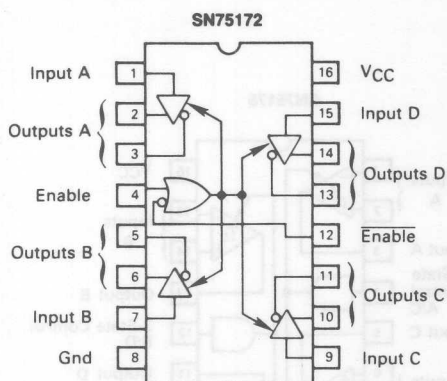
$T_A = 0 \text{ to } +70^\circ\text{C}$

Packages: P1 Suffix — Case 626
U Suffix — Case 693

RS-449/485 SPECIFICATION (PARTY LINE)

DRIVERS

The **SN75172/SN75174** are monolithic quad differential line drivers with three-state outputs.



TRUTH TABLE			
Input	Control Inputs (E/ \bar{E})	Noninverting Output	Inverting Output
H	H/L	H	L
L	H/L	L	H
X	L/H	Z	Z

L = Low Logic State
 H = High Logic State
 X = Irrelevant
 Z = Third-State (High Impedance)

TRUTH TABLE			
Input	Control Input	Noninverting Output	Inverting Output
H	H	H	L
L	H	L	H
X	L	Z	Z

L = Low Logic State
 H = High Logic State
 X = Irrelevant
 Z = Third-State (High Impedance)

$T_A = 0$ to $+70^\circ\text{C}$

Packages:

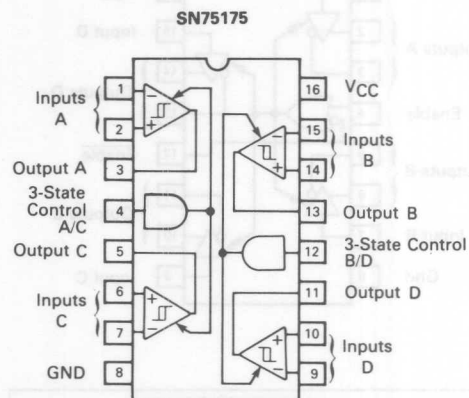
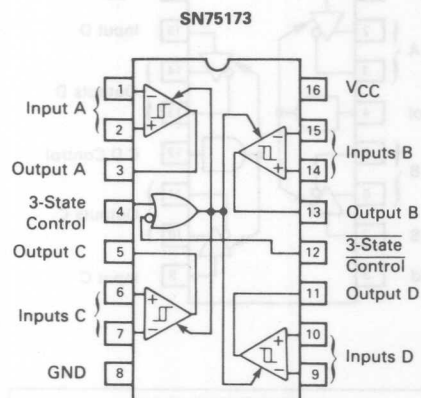
L Suffix — Case 620

P Suffix — Case 648

RS-449/485 Specification Party Line (continued)

RECEIVERS

The **SN75173/SN75175** are monolithic quad differential line receivers with three-state outputs.



FUNCTION TABLE (EACH RECEIVER)

Differential Inputs A-B	Enables		Output Y
	G	\bar{G}	
$V_{ID} \geq 0.2 \text{ V}$	H	X	H
	X	L	H
$-0.2 \text{ V} < V_{ID} < 0.2 \text{ V}$	H	X	?
	X	L	?
$V_{ID} \leq -0.2 \text{ V}$	H	X	L
	X	L	L
X	L	H	Z

FUNCTION TABLE (EACH RECEIVER)

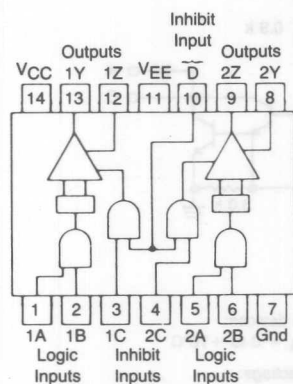
Differential Inputs A-B	Enable	Output Y
$V_{ID} \geq 0.2 \text{ V}$	H	H
$-0.2 \text{ V} < V_{ID} < 0.2 \text{ V}$	H	?
$V_{ID} \leq -0.2 \text{ V}$	H	L
X	L	Z

H = high level
 L = low level
 X = irrelevant
 ? = indeterminate
 Z = high-impedance (off)

Differential Current Mode

DRIVERS

MC75S110— Dual; industry standard.



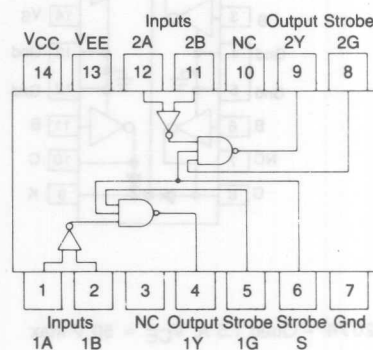
$T_A = 0 \text{ to } +70^\circ\text{C}$
(MC75xxx)
 $-55 \text{ to } +125^\circ\text{C}$
(MC55xxx)

Packages:
L Suffix — Case 632
P Suffix — Case 646
(MC75xxx only)

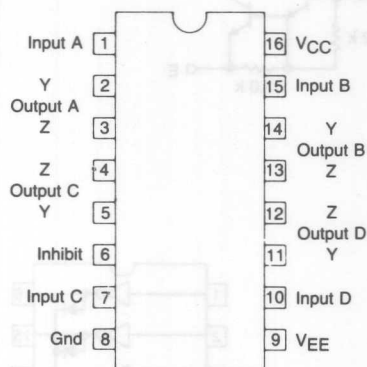
RECEIVERS

MC75107 — Dual; active pullup output.

MC75108 — Dual; open-collector output.



MC3453— Quad; common inhibit input; current sink approximately 12 mA.

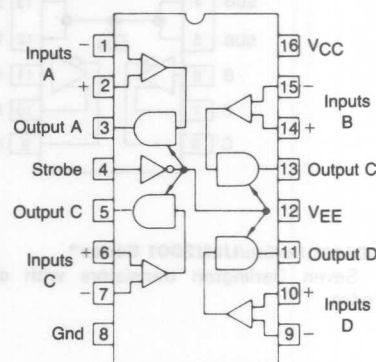


All three devices:
 $T_A = 0 \text{ to } +70^\circ\text{C}$

Packages:
L Suffix — Case 620
P Suffix — Case 648

MC3450— Quad; active pullup outputs; common three-state enable.

MC3452— Quad; open-collector outputs.



BOTH DRIVERS

I_O (on) mA Min	I_O (off) μA Max	t_{PHL} ns Max
6.5	100	15

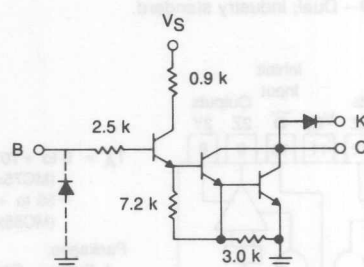
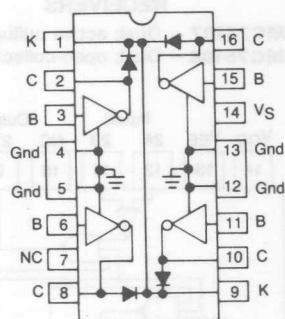
ALL RECEIVERS

Input V_{ID} mV Max	I_{IH} @ $V_{ID} = 2.0 \text{ V}$ μA Max	I_{IL} @ $V_{ID} = -2.0 \text{ V}$ μA Max	t_{PLH} ns Max
± 25	75	-10	25

Peripheral Interface

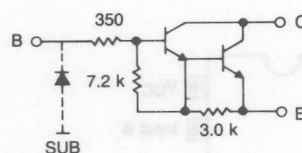
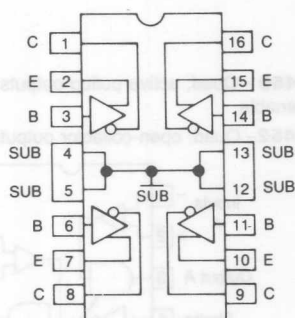
Driver Arrays

ULN2068*— Quad 1.5 A, $V_{CE} = 50$ V Max



Both devices:
 $T_A = 0$ to $+70^\circ\text{C}$
 Package:
 B Suffix — Case 648C

ULN2074*— Quad 1.5 A, $V_{CE} = 50$ V Max



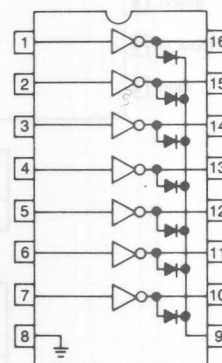
MC1411 Series/ULN2001 Series*

... Seven Darlington transistors with output clamp diodes.

Device Number	Application	Input Element
MC1411/ULN2001	General Purpose	Basic
MC1412/ULN2002	14–25 V PMOS	Zener and Series 10.5 k Ω resistor
MC1413/ULN2003	5.0 V CMOS or TTL	Series 2.7 k Ω resistor
MC1416/ULN2004	8–18 V MOS	Series 10.5 k Ω resistor

All Types:
 $V_{Max} = 50$ V
 $I_{Max} = 500$ mA
 $T_A = 0$ to $+85^\circ\text{C}$

Packages:
 L Suffix — Case 620
 P Suffix — Case 648



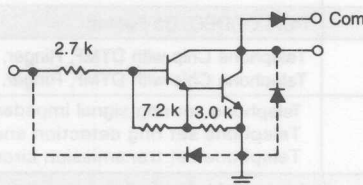
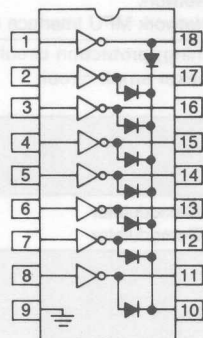
* Also available in extended or military temp. range or with higher output voltage values.

Peripheral Interface (continued)

Driver Arrays (continued)

ULN2801,2,3,4

ULN2803—Octal Darlington Arrays



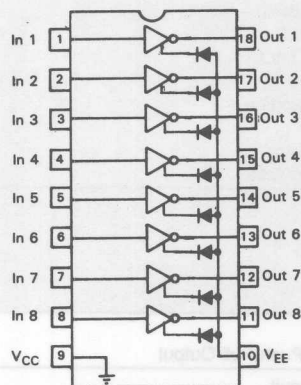
$I_C = 500 \text{ mA}$
 $V_{CE} = 50 \text{ V Max}$
 $T_A = 0 \text{ to } +70^\circ\text{C}$

Package:
 A Suffix — Case 726

Device	Characteristics		
	Input Compatibility	$V_{CE}(\text{Max})/I_C(\text{Max})$	T_A
ULN2801A	General Purpose CMOS, PMOS	50 V/500 mA	0 to $+70^\circ\text{C}$
ULN2802A	14–25 Volt PMOS	50 V/500 mA	0 to $+70^\circ\text{C}$
ULN2803A	TTL, 5.0 V CMOS	50 V/500 mA	0 to $+70^\circ\text{C}$
ULN2804A	6–15 V CMOS, PMOS	50 V/500 mA	0 to $+70^\circ\text{C}$

* Higher voltage selections on request.

MC1417P — Octal Darlington Array
 for interfacing NMOS ans lamps, relay or printer hammers.



$I_{OUT} = -300 \text{ mA}$
 $V_{OUT} = -40 \text{ V}$
 $T_A = 0 \text{ to } +70^\circ\text{C}$

Package:
 P suffix — Case 701-01

Telecommunications

Motorola offers the broadest product line with the widest selection of telecommunications integrated circuits in the industry, including products for station set, switching and transmission systems. The range of processes encompasses high density digital CMOS, high and low voltage linear bipolar, and laser trim. A wide variety of package options are available.

Function	Device	Description
CODEC	MC14407	PCM CODEC, D3 Format
Complete Telephone Circuit	MC34011 MC34010	Telephone Chip with DTMF, Ringer, Speech Network Telephone Chip with DTMF, Ringer, Speech Network MPU Interface Logic
Telephone set subcircuits	TCA3381 TCA3382 TCA3383	Telephone set ring signal impedance matching; protection circuit Telephone set ring detection and loudspeaker ampl. circuit Telephone set transmission circuit
Crosspoint Switches	MC142100 MC145100 MC3416	4 x 4 x 1 Analog Switch 4 x 4 x 1 Analog Switch 4 x 4 x 2 Analog Switch
CVSD	MC3417 MC3418	Continuously Variable Slope Delta Modulator/Demodulator Continuously Variable Slope Delta Modulator/Demodulator
Dialers	MC14408 MC14409 MC14410 MC14419 *MC34015 MC34013	Binary-to-Pulse Converter Subsystem Binary-to-Pulse Converter Subsystem 2-of-8 Tone Encoder 2-of-8 Keypad-to-Binary Encoder 2-of-8 DTMF Encoder DTMF Encoder with Speech Network
Filters	MC14413 MC14414 MC145414 MC145415 MC145431 MC145433 MC145440 MC145441 MC145432	PCM Filter with Transmit Bandpass and RCV Lowpass PCM Filter with Transmit and RCV Lowpass Dual Tuneable Lowpass Filter Dual Lowpass Filter-Linear Phase Tuneable Lowpass/Bandpass Filter Tuneable Notch/Bandpass Filter 300 Baud Modem Filter-Bell 103 300 Baud Modem Filter-CCITT V.21 Tuneable Notch/Bandpass Filter
Modems	MC14411 MC14412 MC145440 MC145441 MC145445 MC145450 MC6860 MC6172 MC6173	Bit Rate Generator Universal Low-Speech (0-600BPS) 300 Baud Modem Filter-Bell 103 300 Baud Modem Filter-CCITT V.21 300 Baud Digital Modem 1200 Baud Digital Videotext Modem 0-600 BPS Digital Modem 1200/2400 BPS Digital Modulator 1200/2400 BPS Digital Demodulator
Monocircuit	MC14400 MC14401 MC14402 MC14403 MC14405	PCM CODEC/Filter PCM CODEC/Filter PCM CODEC/Filter PCM CODEC/Filter PCM CODEC/Filter
Ringers	MC34012 MC34017	Telephone Tone Ringer Telephone Tone Ringer with Push-Pull Output
SLIC	MC3419 MC3419-1L	Subscriber Loop Interface Circuit Subscriber Loop Interface Circuit
TSAC	MC14416 MC14417 MC14418	Serial Input Time Slot Assigner Circuit Parallel Input Time Slot Assigner Circuit Bus-Addressable Time Slot Assigner Circuit
Voice/Data	*MC145420 *MC145422 *MC145423 *MC145428 *MC145429	Four-Wire Universal Digital Loop Transceiver Two-Wire Master Universal Digital Loop Transceiver Two-Wire Master Universal Digital Loop Transceiver Data Set Interface Audio Processor

*To Be Introduced.

▣ Devices in shaded — Refer to CMOS Data Manual, Volume 3, High Speed CMOS.

Circuits for Consumer and Automotive Applications

... reflecting Motorola's continuing commitment to semiconductor products necessary for consumer system designs. This tabulation is arranged to simplify first-order selection of consumer integrated circuit devices that satisfy the primary functions for Television, Audio, Radio, TV Games, Cordless Telephone, Automotive and Organ Applications.

T.V., Monitor, Hifi & Radio

Television Subsystems

Function	Features	Case	Type
Monomax One Chip TV	Include video IF, detector, AGC, video amplifier, horizontal processor, vertical processor, and sync for 525 lines systems.	710-02	MC13001
	Same as above except for 625 line systems.	710-02	MC13002
	Same as MC13001, but reverse AGC	710-02	MC13008
	Same as MC13002, but reverse AGC	710-02	MC13009
Sound IF, Low Pass Filter, Detector, dc Volume Control, Preamplifier Power amplifier	Complete TV sound system; 100 μ V, dB limiting sensitivity, 4 Watts output; $V_{CC} = 24V$; $R_L = 16$	648C	TDA3190P
	Same as TDA3190P except for 750mW output.	648C	TDA1190P

Video

Function	Features	Case	Type
SAW Preamp, IF Amplifier, Detector, AGC, AFC	Complete Video IF Parallel Sound IF System Complete AFT System with Simple Quadrature Detector	707	MC13010

Chroma III

Function	Features	Case	Type
PAL, NTSC Decoder	Full multi-standard capability, on screen display (with fast blanking), three DC high impedance user controls, automatic black level set-up, beam current limiting. Low dissipation (typically 600mW)	711	TDA3300B
Secam Adaptor	Expands TDA3300B to SECAM, on-chip NTSC hue control, electronic on-chip Pal-Secam switching. Low dissipation (typically 400mW)	710	TDA3030B
PAL, NTSC Decoder	Full multi-standard capability, on chip contrast, brightness and saturation controls, automatic black level set-up, on-chip NTSC hue control, low dissipation (typically 600mW). No oscillator adjustment.	711	TDA3301
PAL, NTSC, Decoder	Same as TDA3301, but with different user control lows.	711	TDA3303
Chroma Decoder with RGB outputs.	Decodes PAL-NTSC. On-chip NTSC hue control. Burst gating either from standard sandcastle or on-chip generated from flyback pulse. No oscillator adjustment. Interfaces with TDA3030B.	724	TDA3330
Colour difference Decoder with R-Y & B-Y outputs.	Decodes PAL-NTSC. On-chips NTSC hue control. No oscillator adjustment. Interfaces with TDA3030B	701	TDA3333

T.V., Monitor, Hifi & Radio (continued)

Deflection

Function	Features	Case	Type
Horizontal & Vertical Processor	Includes sync. separator, horizontal PLL's vertical countdown and vertical ramp generator and driver (625 lines).	738	MC13013
	Same as above, except for 525 lines.	738	MC13012
Horizontal & Vertical Processor	Includes SYNC Separator, Pulse Regulator, phase Detector, vertical Integrator and Oscillator, FBK Buffer and blanking Gate.	648	MC13015*

* To be introduced

Sound

Function	Features	Case	Type
Sound IF Detector-Limiter	30uV, 3db limiting at 5.5MHz, 1V (RMS) output, improved DC volume control.	646	TBA120C
Sound IF, Low Pass dc Volume Control, Preamplifier.	Complete TV sound system; 100uV, 3DB limiting	648C	TDA3190P
	750mW output	648C	TDA1190P
Stereo Sound Control System	Stereo balance, volume, bass, treble control. Low component count. Supply Voltage 8.5-18V	707	TCA5550
Parallel Sound IF/AFT	Includes saw filter preamplifier; wideband IF amplifier, intercarrier detector, AFT discriminator and internal voltage regulator (8.2V)	701	MC13010

TV Tuning & Control Circuits

Function	Features	Case	Type
Linear Processor Circuit for Tuning Memory System	Active filter for D/A conversion of tuning voltage Regulation of operation voltages. Band decoder and direct tuner drivers (35mA) TV station capture control. AFC output.	724	UAA1008A
Phase Locked Loop Synthesizer & Driver for Frequency Synthesizer System	14-bit variable divider and 4-bit band select PLL and frequency comparator. Filter and tuning voltage amplifier. 16MHz max. input frequency. 14MHz reference. Buffered output. Pin option for 125KHz or 62.5LHz resolution. 4 band driver outputs (35mA)	724	UAA2000A
Synthesizer Amplifier & Driver in Bipolar I ² L Technology	Direct tuner driver from 4 band drivers. 60mA band driver capability. Direct control of the tuner's varicap diode.	648	UAA2001
16-Segment Led Driver	Led brightness control voltage. Current source segment driver output (so no external resistor for segment currents). No multiplexing (no RFI). Reliable data transfer from microprocessor Cascadable.	724	UAA2022
IR Remote Control Amplifier-Detector	High gain pre-amp. Envelope detector. Simple interface to microcomputer. Remote control decoder.	626	MC3373

Power Supply Control

Function	Features	Case	Type
Flyback Converter Regulator Control Circuit.	Wide operational range, high-voltage stability, direct control of switching transistors, low start-up current, reverse linear overload characteristic curve.	SIP9	TDA4600

T.V., Monitor, Hifi & Radio (continued)

FM Stereo Decoders

Function	Channel Separation dB TYP	TDH %TYP	STEREO Indicator	Features	Case	Type
FM Multiplex Stereo Decoder	40	0.3	75	Coiless operation	646	MC1310
FM Multiplex Stereo Decoder	47	0.1	50	6 Volt Operation	646	MC1309
FM Multiplex Stereo Decoder	45	0.2	100	Variable blend	648	TCA4500A
FM Multiplex Stereo Decoder	45	0.9	100	8 Volt Operation	648	UA758A

AM Stereo Decoders

Features	Function	Case	Device
CQUAM® AM Stereo Decoder	Monaural/Stereo AM Detector, Indicator	738	MC13020

Radio Frequency Synthesizer circuits

Function	Features	Case	Type
Two Module Prescaler	Divide-by-15 and 16. Toggle frequency = 140MHz	626	MC3393
Divide-by-20 Prescaler	200MHz toggle frequency	626	MC3396
AM/FM Frequency Synthesizer Prescaler	Divide by 80/82 operation to 120MHz (FM) Divide by 10/11 operation to 20MHz (AM) High input sensitivity. Low power consumption.	626	UAA2004
Phase Locked Loop Interface Circuit for Radio Frequency Synthesiser System.	Direct switching (50mA) of up to 5 bands. Complete 1-chip FM/AM radio receiver system. Low external component count. Low distortion (FM = 0.15% typ; AM = 0.35% typ) High sensitivity.	648	UAA2003B

Home Computer, Video Camera, VCR, & Satellite Receiver

Features	Function	Case	Device
Color TV Video Modulator	includes Chroma oscillator and clock driver, lead and lag network, chroma modulator, RF oscillator, and modulator.	646	MC1372
	Includes RF oscillator and modulator.	626	MC1373
TV Modulator (VHF)	Includes RF oscillator/modulator, and FM sound	646	MC1374
RGB to PAL/NTSC encoder	Includes colour subcarrier oscillator, voltage controlled 90° phase shifter, two DSB suppressed carrier chroma modulators, RGB input matrices and blanking level clamps.	738	MC1377
PAL, NTSC Decoder with RGB outputs	On-chip hue control. DF/DT input gives burst gating without sandcastle. On oscillator adjustment. Low dissipation.	724	TDA3330
Colour difference Decoder with R-Y & B-Y outputs.	Decodes PAL-NTSC. On-chip hue control. No oscillator adjustment. Interfaces with TDA3030B.	701	TDA3333
TV Modulator (UHF)	Includes FM Audio Modulator, sound carrier oscillator and RF dual input Modulator.	646	MC13074

Radio Communication, Cordless Telephone, Pager & Citizenband

FM-IF Receiver

Function	Gain At 10.7MHz dB TYP	3dB limiting At 10.7MHz uV (RMS) TYP	AMR dB TYP	Recovered Audio output f = $\pm 75\text{KHz}$ mV (RMS)	Power Supply Volts Max	Case	Type
Low-Power FM-IF for dual conversion scanning receivers	—	5.0	50	350 (f = $\pm 3.0\text{KHz}$)	8.0	648	MC3357
Hi gain low Power narrow band FM	100	2.0	40	700	12	701-01	MC3359
Low voltage low-Power narrow band IF	—	2.0	55	150	8.0	648	MC3361

FSK Receiver

Function	Features	Case	Device
Wideband FSK receiver for digital data communication	Includes oscillator, mixer, limiting IF amplifier, quadrature detector, audio buffer, squelch, meter drive, squelch status output, and data shaper comparator.	738	MC3356

Cordless telephone Hand-set Glue Chip

Features	Function	Case	Device
FM Modulator with MIC amplifier	Includes FM oscillator and Modulator, MIC Amplifier and low Battery Voltage Detector	648	MC2831*

Modulator

Features	Function	Case	Device
FM Modulator	Includes FM oscillator and modulator. Ideal for base station/cordless telephone (1.4 to 14 MHz) applications	626	MC1376

Attenuator and tone control

Function	VCC Range Vdc	THD % TYP	V dB TYP	Attenuation Range dB TYP	Case	Type
Electronic Attenuator	9.0-18	0.6	13	90	626	MC3340
Stereo, Volume, Bass, Treble, Balance	8.5-18	0.1	10	80	707	TCA5550

Transistor Array

Function	I _C (max) mA	V _{ceo} Volts max	V _{cbo} Volts max	V _{ebo} Volts max	Case	Type
One differentially connected pair and three isolated transistors	50	15	20	5.0	646	MC3346 MC3386

* to be introduced

Automotive

Electronic Ignition

Features	Function	Case	Device
Electronic Ignition Circuit	Designed for Use in High Energy Variable Dwell Electronic Ignition Systems with Variable Reluctance Sensors. Dwell and Spark Energy are Externally Adjustable	626	MC3334
Flip-Chip Electronic	Same as MC3334	—	MCCF3334

Fuel Injection

Features	Function	Case	Device
Injector Driver	Pulse power driver for use automatic fuel injection systems.	3148	MC3484

Direction Indicator

Features	Function	Case	Device
Direction & warning Lamp Indicator	Defect lamp detection. Overvoltage protection. Short circuit detection. Reverse battery connection protection. On-chip suppression clamp diode.	626	UAA1041

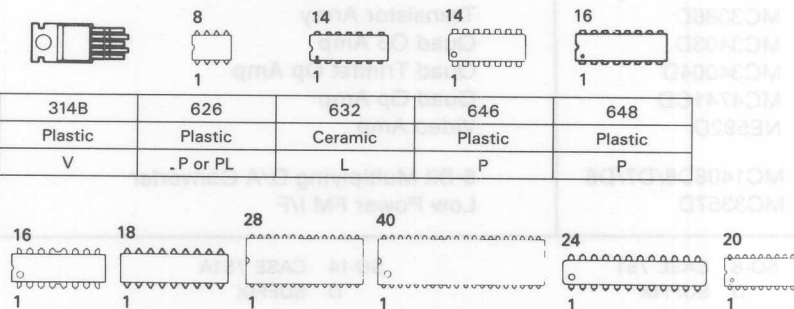
Special Functions

Features	Function	Case	Device
Universal Microprocessor Power supply circuit.	5V/300mA voltage regulator for microprocessor supply. 30V/50mA programmable DC/DC voltage converter. Power-up reset generator including undervoltage detection and watch-dog feature.	707	TCA5600
16-BIT Serial-parallel Interface	16 digitally controlled output buffers. Open collector NPN outputs. 50mA current output capability. Cascadable. Pin compatible with UAA2022.	724	UAA2023
Peripheral Clamping array.	6 Clamping cells for input/output protection of μ P systems. Accurate data acquisition. Low external component count.	626	TCF6000*

*To be introduced

Package Styles

Case	314B	626	632	646	648
Material	Plastic	Plastic	Ceramic	Plastic	Plastic
Suffix	V	.P or PL	L	P	P



648C	707	710	711	724	738
Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
P	P	P	P	P	(20 pin)

Motorola Bipolar Integrated Circuits Group

Types of Linear IC's Available in SOIC Packages

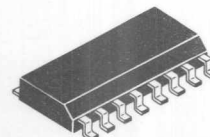
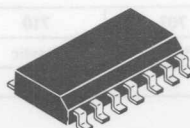
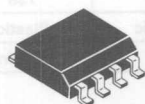
The table below lists those Linear IC devices that will form the core of our initial introduction lineup. All current and future Linear IC products are potential candidates for the SOIC package as long as their chip size fits the die-bond area (flag) of the package and their power dissipation is within the package range.

DEVICE	FUNCTION	PACKAGE
LM201D	General Purpose Op Amp	SO-8
LM208D	Precision Op Amp	SO-8
LM211D	Comparator	SO-8
LM258D	Dual Op Amp	SO-8
LM301AD	General Purpose Op Amp	SO-8
LM308AD	Precision Op Amp	SO-8
LM308D	Precision Op Amp	SO-8
LM311D	Comparator	SO-8
LM358D	Dual Op Amp	SO-8
LM393D	Dual Comparator	SO-8
LM2904D	Dual Op Amp	SO-8
MC1403D	Precision Voltage Reference	SO-8
MC1455D	Timer	SO-8
MC1458CD	Dual Op Amp	SO-8
MC1458D	Dual Op Amp	SO-8
MC1741CD	General Purpose Op Amp	SO-8
MC1776CD	Programmable Op Amp	SO-8
MC34001D	Trimfet Op Amp	SO-8
MC34002D	Dual Trimfet Op Amp	SO-8
MC4558CD	Wide BW Dual Op Amp	SO-8
LM224D	Quad Op Amp	SO-14
LM324D	Quad Op Amp	SO-14
LM339D	Quad Comparator	SO-14
LM2901D	Quad Comparator	SO-14
LM2902D	Quad Op Amp	SO-14
MC1496D	Modulator/Demodulator	SO-14
MC1723CD	Precision Voltage Regulator	SO-14
MC3302D	Quad Comparator	SO-14
MC3346D	Transistor Array	SO-14
MC3386D	Transistor Array	SO-14
MC3403D	Quad Op Amp	SO-14
MC34004D	Quad Trimfet Op Amp	SO-14
MC4741CD	Quad Op Amp	SO-14
NE592D	Video Amp	SO-14
MC1408D8/D7/D6	8-Bit Multiplying D/A Converter	SO-16
MC3357D	Low Power FM I/F	SO-16

SO-8 CASE 751
D SUFFIX

SO-14 CASE 751A
D SUFFIX

SO-16 CASE 751B
D SUFFIX



Cross Reference

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
AD DAC-08AD	DAC-08AG		AMU6A77J3312	MC1733L	
AD DAC-08CD	DAC-08CG		AMU6A77J3393	MC1733L	
AD DAC-08ED	DAC-08EG		AMU6A7741312	MC1741L	
AD DAC-08FD	DAC-08FG		AMU6A7741393	MC1741CL	
AD DAC-08HD	DAC-08HG		AMU6A7748312		MC1748G
AD1403-7D	MC1408L7		AMU6A7748393		MC1748CP1
AD1408-8D	MC1408L8		AMU6W7747312	MC1747L	
AD1403AH		MC1403AU	AMU6W7747393	MC1747CL	
AD1508-8D	MC1508L8		AM166039F		
AD301AL		LM301AH	AM166039T		
AD505J		MC1770CG	AM26LS31DC	AM26LSJ1DC	
AD505K		MC1770CG	AM26LS31FC	AM26LSJ1FC	
AD505S		MC1770G	AM26LS32DC	AM26LSJ2DC	
AD508J		MC1403U	AM26LS32FC	AM26LSJ2FC	
AD509J		LM301AH	AM26S10DC	MC26S10L	
AD509K		LM301AH	AM26S10PC	MC26S10P	
AD509S		LM101AH	AM26S11DC	MC26S11L	
AD518J		LM301AH	AM26S11PC	MC26S11F	
AD518K		LM301AH	AM725A31T		MC1556G
AD518S		LM101AH	AUAF771ATC	MC34001AF	
AD530		MC1595L	CA080AE		MC34001DP
AD531		MC1595L	CA080AS		MC35001DG
AD532J		MC1595G	CA080AT		MC35001DG
AD562AD	AD562AD		CA080UE		MC34001AF
AD562KD	AD562KD		CA080CS		MC34001G
AD562SD	AD562SD		CA080CT		MC34001G
AD563JD	AD563JD		CA080L		MC34001P
AD563KD	AD563KD		CA080S		MC35001DG
AD563SD	AD563SD		CA080T		MC35001G
AD563TD	AD563TD		CA081AE		MC34001DP
AD565JD	AD565JD		CA081AT		MC35001DG
AD565KD	AD565KD		CA081DE		MC34001AP
AD565SD	AD565SD		CA081CS		MC34001G
AD565TD	AD565TD		CA081CT		MC34001G
AD580K		MC3512L	CA081E		MC34001P
AD580M		MC1403AP1	CA081S		MC35001G
AD580S		MC1503U	CA081T		MC35001G
AD580T		MC1503AU	CA082AE		MC34002BP
AD589J		LM385Z-1.2	CA082AS		MC35001BG
AD589K		LM385Z-1.2	CA082AS		MC35002BG
AD589L		LM385Z-1.2	CA082AT		MC35002BG
AD589M		LM385DZ-1.2	CA082BE		MC34002AP
AD741CJ		MC1741CG	CA082CS		MC34002G
AD741J		MC1741G	CA082CT		MC34002G
AD741K		MC1741G	CA082L		MC34002P
AD741L		MC1741G	CA082S		MC35002G
AD741S		MC1741SG	CA082T		MC35002G
AD7520D		MC3410L	CA083AE		MC34002BP
AD7520F		MC3410L	CA083BE		MC34002AP
AD7520N		MC3410L	CA083L		MC34002P
AHLM101			CA101AT	LM101AT	
AHLM101A	LM101AH		CA101T	LM101AH	
AHLM101AD	LM101AH		CA107T	LM107H	
AHLM101AF		LM101AH	CA108AS	LM108AJ-8	
AHLM101C		LM101AH	CA108AT	LM108AH	
AHLM101F		LM101AH	CA108S	LM108J-8	
AHLM107	LM107H		CA108T	LM108H	
AHLM107D		LM107H	CA1310E	MC1310P	
AHLM107F		LM107H	CA1352E	MC1352P	
AHLM111C	LM111J		CA139AG	LM139AJ	
AHLM111H	LM111H		CA139G	LM139J	
AHLM201	LM201AH		CA139IE	MC1391P	
AHLM201A	LM201AH		CA1394E	MC1394P	
AHLM201AD		LM201AH	CA1458D	MC1458CF1	
AHLM201AF		LM201AH	CA1458T	MC1458G	
AHLM201D		LM201AH	CA1558S		MC1558U
AHLM201F		LM201AH	CA1558T	MC1558G	
AHLM207	LM207H		CA201AT	LM201AH	
AHLM207D		LM207H	CA201T		
AHLM207F		LM207H	CA207T	LM207H	
ALM211D	LM211J		CA208AT	LM208AH	
ALM211H	LM211H		CA208S	LM208J-8	
ALM301	LM301AH		CA208T	LM208H	
ALM301AD		LM301AJ	CA2111AL	MC1357P	
ALM301AD	LM301AH		CA2111AQ	MC1357PG	
ALM301D		LM301AJ	CA239AE	LM239AH	
ALM311D	LM311J-8		CA239AG	LM239AJ	
ALM3411H	LM311H		CA239E	LM239J	
ANU3F7733312		MC1733L	CA239G	LM239J	
ANU3F7748312		MC1748G	CA301AT	LM301AH	
ANU3I7741393	MC1741CL		CA3010		MC1709G
ANU5B7733312	MC1733G		CA3010A		MC1709G
ANU5B7733393	MC1743CG		CA3011		MC1590G
ANU5B7741312	MC1741G		CA3012		MC1590G
ANU5B7741393	MC1741CG		CA301J		MC1357P
ANU5B7747312	MC1747G		CA3014		MC1357P
ANU5B7747393	MC1747CG		CA3015		MC1709G
ANU5B7748312	MC1748G		CA3015A		MC1709G
ANU5B7748393	MC1748CGT		CA3020		MC1554G
ANU5R7723312	MC1723G		CA3020A		MC1454G
ANU5R7723393	MC1723CG		CA3021		MC1590G
AMU6A7723312	MC1723L		CA3022		MC1590G
AMU6A7723393	MC1723CL		CA302J		MC1590G

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
CA3026		CA3054	DAC0800LD	DAC-08C	
CA3029		MC1709P2	DAC0801LCJ	DAC-08CG	
CA3029A	MC1709P2		DAC0801LCI	DAC-08CF	
CA3030		MC1709P2	DAC0802LCJ	DAC-08HG	
CA3030A		MC1709P2	DAC0802LCI	DAC-08HP	
CA3035		MC1352P	DAC0802LD	DAC-08AG	
CA3035V1		MC1352P	DAC0806LCJ	MC1408L6	
CA3037		MC1709L	DAC0806LCI	MC1408F6	
CA3037A		MC1709L	DAC0807LCJ	MC1408L7	
CA3038		MC1709L	DAC0807LCI	MC1408F7	
CA3038A		MC1709L	DAC0808LCJ	MC1408L8	
CA3042		MC1357P	DAC0808LCI	MC1408F8	
CA3043		MC1357P	DAC0808LD	MC1508L8	
CA3045		MC3346P	DM7822J		MC1489AL
CA3045F		MC3346P	DM7837J		MC3437L
CA3046		MC3346P	DM8822J		MC1489AL
CA3048		MC3301P	DM8822N		MC1489AF
CA3052		MC3301P	DS0026CH		MC0026CF1
CA3056	MC1741CG		DS0026CJ		MC0026CL
CA3056A	MC1741G		DS0056CJ		MC0026CL
CA3058		CA3059	DS0056CH		MC0026CF1
CA307T	LM307H		DS1488L	MC1488L	
CA3076AS		MC1590G	DS1488N	MC1488F	
CA3078AT		MC1776G	DS1489AJ	MC1489AL	
CA3078S		MC1776G	DS1489AF	MC1489AF	
CA3078T		MC1776CG	DS1489J	MC1489L	
CA3079		MC1776CG	DS1489N	MC1489F	
CA308AS	LM308N	CA3059	DS3486J	MC3486L	
CA308AT	LM308AF		DS3486N	MC3486F	
CA308S	LM308H		DS3487J	MC3487L	
CA308S			DS3487N	MC3487F	
CA308S		MC1723G	DS3612H		MC1472L
CA3085A		MC1723G	DS3612N		MC1472F1
CA3085AF		MC1723L	DS3632H		MC1472L
CA3085AS		MC1723G	DS3632J		MC1472L
CA3085B		MC1723G	DS3632N		MC1472F1
CA3085BF		MC1723L	DS3650J	MC3450L	
CA3085BS		MC1723G	DS3650N	MC3450P	
CA3085F		MC1723L	DS3651J	MC3430L	
CA3085S		MC1723G	DS3651N	MC3430P	
CA3086	HC3386P		DS3652J	MC3452L	
CA3086F		MC3346P	DS3652N	MC3452P	
CA3090AG		MC1310P	DS3653J	MC3432L	
CA3091D		MC1594L	DS3653N	MC3432P	
CA3134		MC3346F	DS5510TW		MC75107L
CA3134E		TDA3190P	DS5510J		MC75S110L
CA3134EM		TDA3190P	DS75107J	MC75107L	
CA3134ON		TDA3190P	DS75107N	MC75107P	
CA3136A		MC3346P	DS75108J	MC75108L	
CA3302E	HC3302P		DS75108N	MC75108P	
CA3308		MC10315L	DS75110J	MC75S110L	
CA339AE	LM339AN		DS75110N	MC75S110P	
CA339AG	LM339AJ		DS75207J		MC75107L
CA339E	LM339N		DS75207N		MC75107P
CA339G	LM339J		DS75208J		MC75108L
CA3401E	HC3401F		DS75208N		MC75108P
CA6078AS		MC1776G	DS7537J		MC3437L
CA6078AT		MC1776G	DS7837W		MC3437L
CA6741S		MC1776G	DS8837J	MC3437L	
CA6741T		MC1776G	DS8837N	MC3437P	
CA723CE	HC1723CP		DJ232	MC3232AP	
CA741CS	HC1741CP1		DJ242	MC3242AP	
CA741CT	MC1741CG		DS55CJ		MC1555G
CA741S	MC1741U		ICB8000C		LM111J
CA741T	MC1741G		ICB8001C		LM111J
CA747CE	MC1747CL		ICB8741C		MC1741CG
CA747CF	MC1747CL		ICH8500ATV		MC1776CG
CA747CT	MC1747CG		ICH8500TV		MC1776CG
CA747E	MC1747L		ICL101ALNDP		LM101AH
CA747F	MC1747L		ICL101ALNFB		LM101AH
CA747T	MC1747G		ICL101ALNTY		LM101AH
CA748CS	MC1748CP1		ICL301ALNPA		LM301AH
CA748CT	MC1748CG		ICL301ALNTY		LM301AH
CA748S	MC1748U		ICL741CLNPA		MC1741CP1
CA748T	MC1748U		ICL741CLNTY		MC1741CP1
CA758E		MC1310P	ICL741LHDP		MC1741L
CHP-01CJ		MC1556G	ICL741LHFB		MC1741L
CS3471	MC3471P		ICL741LHNTY		MC1741L
DAC-1CC10BC	MC3410L		ICL8001CTZ		LM111J
DAC-01		MC1506L	ICL8001MTZ		LM111J
DAC-08AQ	DAC-08AG		ICL8002H		MC1776G
DAC-08CI	DAC-08CP		ICL8007CTA		MC1709CG
DAC-08CF	DAC-08CG		ICL8007MTA		MC1709CG
DAC-08CG	DAC-08CG		ICL8008CPA		LM301AN
DAC-08EN	DAC-08EP		ICL8008CTY		LM301AN
DAC-08EP	DAC-08EP		ICL8013A		MC1594G
DAC-08EQ	DAC-08EG		ICL8013B		MC1594G
DAC-08HI	DAC-08HP		ICL8013C		MC1594G
DAC-08HP	DAC-08HP		ICL8017CTW		LM301AN
DAC-08HQ	DAC-08HQ		ICL8017ITW		LM301AN
DAC-08Q	DAC-08Q		ICL8021C		MC1776G
DAC0800LCJ	DAC-08EG		ICL8021M		MC1776G
DAC0800LCH	DAC-08EP		ICL8022C	MC1776G	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
ICL8043CDL		MC1776G	LF357L	LF357H	LF357J
ICL8043CPL		MC1776G	LF357H		LF357J
ICL8043MDL		MC1776G	LF357P		MC34001AG
ICL8048CDL		MC1776G	LF411ACH		MC34001AP
ICL8048CPL		MC1776G	LF411ACH		MC35001AG
IN51011IE		MC1545G	LF411AMH		MC34001AG
IN5101MIE		MC1545G	LF411CH		MC34001AP
ITT1330		MC1330A2P	LF411CN		MC35001G
ITT1352	MC1352F		LF411MH		MC34002AG
ITT3064	MC1364F		LF412ACH		MC34002AP
ITT3701		TDA3190P	LF412ACH		MC35002AG
ITT652	MC1411F		LF412AMH		MC34002AG
ITT654	MC1412F		LF412CH		MC34002AP
ITT656	MC1413F		LF412CN		MC35002AG
LAS723	MC1723G		LF412MH		MC1776CG
LJ1111CJ	MC1405L		LH0001ACD		MC1776CG
LF101H		MC1741G	LH0001ACH		MC1776G
LF152U		LF155J	LH0001AD		MC1776G
LF155AH	LF155AH		LH0001AF		MC1538R
LF155AJG	LF155AJ		LH0001AH		MC1538R
LF155AL	LF155AL		LH0002CH		MC1436G
LF156H	LF156H		LH0002H		MC1536G
LF156JG	LF156J		LH0004CH		MC1776G
LF156L	LF156L		LH0004H		MC1776CG
LF156AH	LF156AH		LH0042CH		MC1741G
LF156AJG	LF156AJ		LH10001ACF		MC1537L
LF156AL	LF156AL		LH201H		MC1537L
LF156H	LF156H		LH2101AD		MC1537L
LF156JG	LF156J		LH2101AF		MC1537L
LF156L	LF156L		LH2201AD		MC1537L
LF157AH	LF157AH		LH2201AF		MC1437L
LF157AJG	LF157AJ		LH2301AD		LF355H
LF157AL	LF157AL		LH2301AF		
LF157H	LF157H		LH740ACH		
LF157JG	LF157J		LH740AH		
LF157L	LF157H		LM350	LM350K	
LF252U		LF255J	LM101AD		LM101AH
LF255H	LF255H		LM101AF		LM101AH
LF255JG	LF255J		LM101AH	LM101AH	
LF255L	LF255L		LM101AJ		LM101AJ
LF255P	LF255J		LM101AJ-14		LM101AJ
LF256H	LF256H		LM101AJG	LM101AJ	
LF256JG	LF256J		LM101AL	LM101AH	
LF256L	LF256H		LM101AT	LM101AH	
LF256P	LF256J		LM101D		LM101AJ
LF257H	LF257H		LM101F		LM101AH
LF257JG	LF257J		LM101H	LM101AH	
LF257L	LF257H		LM101J-14		LM101AJ
LF257P	LF257J		LM106H		MC1710G
LF347AH	LF347AH		LM107F		LM107H
LF347UN	LF347BH		LM107H	LM107H	
LF347U	LF347H		LM107L		
LF351AH	LF351AH		LM108AD	LM108AJ	
LF351AN	LF351AH		LM108AF	LM108AF	
LF351BH	LF351BH		LM108AH	LM108AH	
LF351BN	LF351BH		LM108AJ	LM108J-8	
LF351H	LF351H		LM108D	LM108J	
LF351H	LF351H		LM108H	LM108H	
LF352L	LF351H		LM109H	LM109H	
LF353AH	LF353AH	LF355J	LM109K	LM109K	
LF353AN	LF353AH		LM109LA	LM109K	
LF353BH	LF353BH		LM11CH	LM11CH	
LF353BN	LF353BH		LM11CJ	LM11CJ	
LF353H	LF353H		LM11CJ-6	LM11CJ-8	
LF353L	LF353H		LM11CLH	LM11CLH	
LF355AH	LF355AH		LM11CLJ	LM11CLJ	
LF355AP		LF355AJ	LM11CLJ-8	LM11CLJ-8	
LF355BH	LF355BH		LM11CLN	LM11CLN	
LF355BJ	LF355BJ		LM11CLN-14	LM11CLN-14	
LF355LN		LF355BJ	LM11CN	LM11CN	
LF355H	LF355H		LM11CN-14	LM11CN-14	
LF355JG	LF355J		LM11H	LM11H	
LF355L	LF355H		LM11J	LM11J	
LF355P		LF355J	LM11J-8	LM11J-8	
LF356AH	LF356AH	LF355J	LM111D	LM111J	
LF356AJG	LF356J		LM111H	LM111H	
LF356AL	LF356AH		LM112D		MC1556L
LF356AP		LF356AJ	LM112F		MC1556L
LF356BH	LF356BH		LM112H		MC1556G
LF356BJ	LF356BJ		LM117H	LM117H	
LF356LN		LF356BJ	LM117K	LM117K	
LF356H	LF356H		LM118D		MC1741SL
LF356JG	LF356H		LM118F		MC1741SL
LF356L	LF356H		LM118H		MC7912CK
LF356N		LF356J	LM120H-12		MC7915CK
LF356P		LF356J	LM120H-15		MC7918CK
LF357AH	LF357AH		LM120H-18		MC7924CK
LF357BH	LF357BH		LM120H-24		MC7905CK
LF357DJ	LF357BJ		LM120H-5.0		MC7905.2CK
LF357LN		LF357BJ	LM120H-5.2		MC7906CK
LF357H	LF357H		LM120H-6.0		MC7908CK
LF357JG	LF357J		LM120H-8.0		MC7912CK
			LM120K-12		

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
LM120K-18		MC7918CK	LM201H		LM201AH
LM120K-24		MC7924CK	LM201J	LM201AJ	LM201AJ
LM120K-5.0		MC7905CK	LM201J-14		MC1710CG
LM120K-5.2		MC7905.2CK	LM207H		LM207H
LM120K-6.0		MC7906CK	LM207F		
LM120K-8.0		MC7908CK	LM208AD	LM208AJ	
LM122F		MC1555G	LM208AD	LM208AJ	
LM122H		MC1555G	LM208AH	LM208AJ	
LM123K	LM123K		LM208AJ	LM208AJ-8	
LM124AD		LM124AJ	LM208D		LM208J-8
LM124AF		LM124J	LM208H	LM208H	
LM124AJ		LM124J	LM209H	LM209H	
LM124D	LM124J		LM209K	LM209K	
LM124F		LM124J	LM211D	LM211H	
LM124J	LM124J		LM211H	LM211H	
LM125H		MC1468G	LM212D		MC1556L
LM126H		MC1568G	LM212F		MC1556L
LM128H		MC1568G	LM212H		MC1456G
LM130KLAH-5.0		MC7805ACG	LM217H	LM217H	
LM1310N	MC1310P		LM217K	LM217K	
LM1351N	MC1351F		LM218D		MC1741SL
LM137K	LM137K		LM218F		MC1741SL
LM139AD	LM139AJ		LM218H		MC1741SG
LM139AJ	LM139AJ		LM220H-12		MC7912CK
LM139D	LM139J		LM220H-15		MC7915CK
LM139J	LM139J		LM220H-18		MC7913CK
LM139IN	MC1391F		LM220H-24		MC7924CK
LM140K-12	LM140K-12		LM220H-5.0		MC7905CK
LM140K-15	LM140K-15		LM220H-5.2		MC7905.2CK
LM140K-18	LM140K-18		LM220H-6.0		MC7906CK
LM140K-24	LM140K-24		LM220H-8.0		MC790JCK
LM140K-5.0	LM140K-5.0		LM220K-12		MC7912CK
LM140K-6.0	LM140K-6.0		LM220K-15		MC7915CK
LM140K-8.0	LM140K-8.0		LM220K-18		MC7918CK
LM140LAH-12		MC78L12ACG	LM220K-24		MC7924CK
LM140LAH-15		MC78L15ACG	LM220K-5.0		MC7905CK
LM140LAH-18		MC78L18ACG	LM220K-5.2		MC7905.2CK
LM140LAH-24		MC78L24ACG	LM220K-6.0		MC7906CK
LM140LAH-5.0		MC78L05ACG	LM220K-8.0		MC7908CK
LM140LAH-8.0		MC78L08ACG	LM222H		MC1555G
LM1414J	MC1414L		LM223K	LM223K	
LM1414N	MC1414P		LM224AD		LM224J
LM143D		MC1536G	LM224AF		LM224J
LM143F		MC1536G	LM224AJ		LM224J
LM143H		MC1536G	LM224D	LM224J	
LM145K		MC7905CK	LM224F		LM224L
LM1458H	MC1458G		LM224J	LM224J	
LM1458J	MC1458U		LM225H		MC1568G
LM1458N	MC1458P1		LM226H		MC1568G
LM1458N-14	MC1458P2		LM228H		MC1566G
LM148D	LM148J		LM237K	LM237K	
LM148F		MC4741L	LM239AD	LM239AJ	
LM148J		MC4741L	LM239AJ	LM239J	
LM149D		MC4741L	LM239D	LM239J	
LM149F			LM239J	LM239J	
LM1496H	MC1496G		LM240LAH-12		MC78L12ACG
LM1496J	MC1496L		LM240LAH-15		MC78L15ACG
LM1496N	MC1496P		LM240LAH-18		MC78L18ACG
LM150K	LM150K		LM240LAH-24		MC78L24ACG
LM1514J	MC1514L		LM240LAH-5.0		MC78L05ACG
LM1558H	MC1558G		LM240LAH-6.0		MC78L06ACG
LM1558J	MC1558U		LM240LAH-8.0		MC78L08ACG
LM158AH		LM158H	LM240LAZ-12		MC78L12ACP
LM158H	LM158H		LM240LAZ-15		MC78L15ACP
LM158JG	LM158J		LM240LAZ-18		MC78L18ACP
LM158L	LM158H		LM240LAZ-24		MC78L24ACP
LM1596H	MC1596G		LM240LAZ-5.0		MC78L05ACP
LM1596J	MC1596L		LM240LAZ-6.0		MC78L06ACP
LM163J		MC3450L	LM240LAZ-8.0		MC78L08ACP
LM168AH-10		MC1500AG10	LM243H		MC1536G
LM168AH-5		MC1500AG5	LM245K		MC7905CK
LM168AH-6		MC1500AG6	LM248D	LM248J	
LM168H-10		MC1500G10	LM248J	LM249J	
LM168H-5		MC1500G5	LM249D		MC4741L
LM168H-6		MC1500G6	LM249J		MC4741L
LM171H		MC1590G	LM250K	LM250K	
LM1800AN		UA758A	LM258AH		LM258H
LM1800N		UA758A	LM258H	LM258H	
LM1900D		TDA3190P	LM268AH-10		MC1400AG10
LM193AH	LM193AH	MC3301L	LM268AH-5		MC1400AG5
LM193H	LM193H		LM268AH-6		MC1400AG6
LM201AD			LM268H-10		MC1400G10
LM201AF		LM201AJ	LM268H-5		MC1400G5
LM201AG	LM201AJ	LM201AH	LM268H-6		MC1400G6
LM201AH	LM201AH		LM271H		MC1590G
LM201AJ		LM201AJ	LM285Z-1.2	LM285Z-1.2	
LM201AJ-14		LM201AJ	LM285Z-2.5	LM285Z-2.5	
LM201AL	LM201AH		LM2900J		MC3301L
LM201AN		LM201AN	LM2900N		MC3301P
LM201AP	LM201AN		LM2901N	LM2901N	
LM201D		LM201AJ	LM2902J	LM2902J	
LM201D		LM201AJ	LM2902N	LM2902N	
			LM2903N	LM2903N	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
LM2904N	LM2904N		LM3301N	MC3301P	
LM2905N		MC1455P1	LM3302J	MC3302L	
LM293AH	LM293AH		LM3302N	MC3302F	
LM293H	LM293H		LM337K	LM337K	
LM301AD		LM301AJ	LM337KC	LM337T	
LM301AF		LM301AH	LM337T	LM337T	
LM301AH	LM301AH		LM339AD	LM339AJ	
LM301AJ	LM301AJ		LM339AN	LM339AN	
LM301AJG	LM301AJ		LM339N	LM339N	
LM301AL	LM301AH				MC7812CK
LM301AN	LM301AN		LM340K-12		MC7815CK
LM301AP	LM301AN		LM340K-15		MC7815CK
LM3011H		MC1550G	LM340K-18		MC7824CK
LM302H	LM310H		LM340K-24		MC7805CK
LM304S		MC3346P	LM340K-5.0		MC7806CK
LM304CN	MC3346F		LM340K-6.0		MC7808CK
LM306H		MC1710CG	LM340K-8.0		MC7812CK
LM307H		LM307H	LM340KC-12		MC7815CK
LM307L	LM307H		LM340KC-15		MC7818CK
LM307N	LM307H		LM340KC-18		MC7824CK
LM307P	LM307H		LM340KC-24		MC7805CK
LM308AD		LM308AJ	LM340KC-5.0		MC7806CK
LM308AD			LM340KC-6.0		MC7808CK
LM308AH			LM340KC-8.0		MC7812CK
LM308AH-1	LM308AJ		LM340LAH-12		MC7815CK
LM308AH-2	LM308AF		LM340LAH-15		MC7818CK
LM308AJ		LM308AH	LM340LAH-18		MC7824CK
LM308J	LM308AJ-8		LM340LAH-24		MC7805CK
LM308H	LM308J		LM340LAH-5.0		MC7806CK
LM308H	LM308H		LM340LAH-6.0		MC7808CK
LM308H	LM308H		LM340LAH-8.0		MC7812CK
LM308CN	MC3386P		LM340LAZ-12		MC7815CK
LM309H	LM309H		LM340LAZ-15		MC7818CK
LM309K	LM309K		LM340LAZ-18		MC7824CK
LM309KC	LM309K		LM340LAZ-24		MC7805CK
LM309LA	LM309K		LM340LAZ-5.0		MC7806CK
LM311L	LM311J		LM340LAZ-6.0		MC7808CK
LM311H	LM311H		LM340LAZ-8.0		MC7812CK
LM311N	LM311N		LM340T-12		MC7815CK
LM311N-14	LM311J		LM340T-15		MC7818CK
LM312D		MC1456L	LM340T-18		MC7824CK
LM312F		MC1456L	LM340T-24		MC7805CK
LM312H		MC1456G	LM340T-5.0		MC7806CK
LM3146		MC3346P	LM340T-6.0		MC7808CK
LM3146A		MC3346F	LM340T-8.0		
LM317H	LM317H		LM3401N	MC3401P	
LM317K	LM317K		LM341P-12		MC78M12CT
LM317KC	LM317T		LM341P-15		MC78M15CT
LM317P	LM317MT		LM341P-18		MC78M18CT
LM317T	LM317T		LM341P-24		MC78M24CT
LM318L		MC1741SCL	LM341P-5.0		MC78M05CT
LM318F		MC1741SCL	LM341P-6.0		MC78M06CT
LM318H		MC1741SCG	LM341P-8.0		MC78M08CT
LM318H		MC1741SCP1	LM342P-12		MC78M12CT
LM320K-12		MC7912CK	LM342P-15		MC78M15CT
LM320K-15		MC7915CK	LM342P-18		MC78M18CT
LM320K-18		MC7918CK	LM342P-24		MC78M24CT
LM320K-24		MC7924CK	LM342P-5.0		MC78M05CT
LM320K-5.0		MC7905CK	LM342P-6.0		MC78M06CT
LM320K-6.0		MC7906CK	LM342P-8.0		MC78M08CT
LM320K-8.0		MC7908CK	LM343D		MC1436G
LM320MP-12		MC7912CT	LM343H		MC1436G
LM320MP-15		MC7915CT	LM345K		MC7905CK
LM320MP-18		MC7918CT	LM348D	LM348J	
LM320MP-24		MC7924CT	LM348J	LM348N	
LM320MP-5.0		MC7905CT	LM349D		MC4741CL
LM320MP-5.2		MC7905.2CT	LM349J		MC4741CL
LM320MP-6.0		MC7906CT	LM349N		MC4741CL
LM320MP-8.0		MC7908CT	LM350K		
LM320T-12		MC7912CT	LM350T		
LM320T-15		MC7915CT			LM358H
LM320T-18		MC7918CT			LM358N
LM320T-24		MC7924CT			
LM320T-5.0		MC7905CT	LM358H		
LM320T-5.2		MC7905.2CT	LM358J		
LM320T-6.0		MC7906CT	LM358N		
LM320T-8.0		MC7908CT	LM358N		
LM322H		MC1455G			MC3450L
LM322N		MC1455P1	LM363AJ		MC3450P
LM323K	LM323		LM363AN		MC3450L
LM323T	LM323T		LM363J		MC3450P
LM324AJ		LM324J	LM363N		MC1400AG10
LM324AN		LM324N	LM368AH-10		MC1400AG5
LM324J	LM324J		LM368AH-5		MC1400AG6
LM324L	LM324N		LM368AH-6		MC1400G10
LM325AN		MC1468L	LM368H-10		MC1400G5
LM325H		MC1468G	LM368H-5		MC1400G6
LM325N		MC1468L	LM368H-6		MC1590G
LM326H		MC1468G	LM371H		MC1590G
LM326N		MC1468L	LM371H		
LM328AN		MC1468L	LM385BZ-1.2	LM385BZ-1.2	
LM328H		MC1468G	LM385BZ-2.5	LM385BZ-2.5	
LM328N		MC1468L	LM385Z-1.2	LM385Z-1.2	
			LM385Z-2.5	LM385Z-2.5	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
LM3900N		MC3401P	LM78L12CZ	MC78L12CF	
LM3905N		MC1455P1	LM78L15ACH	MC78L15ACG	
LM393AH	LM393AH		LM78L15ACZ	MC78L15ACP	
LM393H	LM393H		LM78L15CH	MC78L15CG	
LM4250CH		MC1766CG	LM78L15CZ	MC78L15CF	
LM4250CN		MC1776CP1	LM78L18ACH	MC78L18ACG	
LM4250H		MC1776G	LM78L18ACZ	MC78L18ACP	
LM55109J		MC755110L	LM78L18CH	MC78L18CG	
LM555CH			LM78L18CZ	MC78L18CF	
LM555CN	MC1455G		LM78L24ACH	MC78L24ACG	
LM555H	MC1455F1		LM78L24ACZ	MC78L24ACP	
LM556CD	MC3456L		LM78L24CH	MC78L24CG	
LM556CJ	MC3456L		LM78L24CZ	MC78L24CF	
LM556CN	MC3456F		LM7805KC	MC7805CK	
LM556D	MC3556L		LM7806KC	MC7806CK	
LM556J	MC3556L		LM7808KC	MC7808CK	
LM565CH		NE565H	LM7812KC	MC7812CK	
LM565CN	NE565H	NE565H	LM7815KC	MC7815CK	
LM565H			LM7818KC	MC7818CK	
LM709AH	MC1709AG		LM7824KC	MC7824CK	
LM709AJ	MC1709AL		L120A		TDA1185A
LM709CH	MC1709CG		L121A		UAA1004
LM709CJ	MC1709CL		L144AP		LM324N
LM709CN	MC1709CP2		L201	MC1411F	
LM709CN-8	MC1709CP1		L202	MC1412F	
LM709H	MC1709C		L203	MC1413F	
LM709J	MC1709L		L204	MC1416F	
LM710CN	MC1710CP		L78S05CV		MC78T05CK
LM710H	MC1710G		L78S12CT		MC78T12CK
LM711CN	MC1711CP		L78S12CV		MC78T12CT
LM711CN	MC1711CF		L78S15CT		MC78T15CK
LM711H	MC1711G		L78S15CV		MC78T15CT
LM723CD	MC1733CL		L78S18CT		MC78T18CK
LM723CH	MC1723CG		L78S18CV		MC78T18CT
LM723CJ	MC1723CL		L78S24CT		MC78T24CK
LM723CN	MC1723CP		L78S24CV		MC78T24CT
LM723H	MC1723G		LM78S05CT		MC78T05CK
LM723J	MC1723G		MB3759	TL494CH	
LM733CH	MC1733CG		MB3760	TL495CH	
LM733CJ	MC1733CL		MC1310A	MC1310F	
LM733CN	MC1733CP		MC1408B	MC1408P8	
LM733D	MC1733L		MC1408F	MC1408L8	
LM733H	MC1733G		MC1458JG	MC1458U	
LM733J	MC1733L		MC1458L	MC1458G	
LM741AD		MC1741L	MC1458P	MC1458F1	
LM741AH		MC1741G	MC1558JG	MC1558U	
LM741AJ-14		MC1741L	MC1558L	MC1558G	
LM741CH	MC1741CG		MC710CH	MC1710CG	
LM741CJ	MC1741CU		MC723CM	MC1723CL	
LM741CJ-14	MC1741CL		MH0026CF		MC0026CP1
LM741CN	MC1741CP1		MH0026CL		MC0026CP1
LM741CN-14	MC1741CP2		MH0026F		MC0026CL
LM741LD		MC1741CL	MH0026H		MC0026CG
LM741EH		MC1741CG	MC709-1	MC1709G	
LM741LJ		MC1741CU	MC709-5	MC1709CG	
LM741LJ-14		MC1741CL	MC710-1C	MC1710G	
LM741LN		MC1741CP1	MC710-5C	MC1710CG	
LM741H	MC1741G		MC711-1C	MC1711G	
LM741H	MC1741G		MC711-5C	MC1711CG	
LM741J-14	MC1741L		MC723-1	MC1723G	
LM747CD	MC1747CL		MC723-5	MC1723CG	
LM747CH	MC1747CG		MC741-1C	MC1741G	
LM747CJ	MC1747CL		MC741-1D	MC1741L	
LM747CN	MC1747CP2		MC741-5C	MC1741CG	
LM747D	MC1747L		MC741-5D	MC1741CL	
LM747H	MC1747G		ML101AF		LM101AH
LM747J	MC1747L		ML101AM		LM101AH
LM748CH	MC1748CG		ML101F		LM101AH
LM748CJ	MC1748CU		ML101M		LM101AH
LM748CN	MC1748CP1		ML101T		
LM748H	MC1748G		ML107F	LM101AH	
LM748J	MC1748U		ML107H		LM107H
LM75107AJ	MC75107L		ML107T		
LM75107AN	MC75107P		ML108AF		
LM75108AJ	MC75108L		ML108AM	LM108AJ	
LM75108AN	MC75108P		ML108AT	LM108AH	
LM75110J	MC755110L		ML108K	LM108J	
LM75110H	MC755110P		ML108T	LM108H	
LM75207L		MC75107L	ML111K	LM111J	
LM75207H		MC75107P	ML111S		LM111J
LM75208J		MC75108L	ML111T		
LM75208N		MC75108P	ML118F		MC1741SG
LM78L05ACH	MC78L05ACG		ML118M		MC1741SG
LM78L05ACZ	MC78L05ACP		ML118T		MC1741SG
LM78L05CH	MC78L05CG		ML1436T	MC1436G	
LM78L05CZ	MC78L05CP		ML1437P	MC1437P	
LM78L08ACH	MC78L08ACG		ML1458P	MC1458P2	
LM78L08ACZ	MC78L08ACP		ML1458S	MC1458P1	
LM78L08CH	MC78L08CG		ML1458T	MC1458G	
LM78L08CZ	MC78L08CP		ML1488M	MC1488L	
LM78L12ACH	MC78L12ACG		ML1489AM	MC1489AL	
LM78L12ACZ	MC78L12ACP		ML1489M	MC1489L	
LM78L12CH	MC78L12CG		ML1536T	MC1536G	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
ML1537M	MC1537L		MP562AD	AD562AC	
ML1558M	MC1558L		MP562KD	AD562KC	
ML1558T	MC1558G		MP562SD	AD562SC	
ML201AF		LM201AH	NE501A		MC173JCL
ML201AM		LM201AH	NE501K		MC173JCG
ML201AT	LM201AH		NE531G		MC1439G
ML201F		LM201AH	NE531T		MC1439G
ML201N		LM201AH	NE531V		MC1439P
ML201T	LM201AH		NE533G		MC1776CG
ML207F		LM207H	NE533T		MC1776CG
ML207M		LM207H	NE533V		MC1776CG
ML207T	LM207H		NE537G		MC1456G
ML208AF		MC1556G	NE537T		MC1456G
ML208AM	LM208AJ		NE540L		MC1554G
ML208AT	LM208AJ		NE550A		MC1723CP
ML208M	LM208J		NE550JG	HC1455L	
ML208T	LM208H		NE550L		MC1723CG
ML211M	LM211J		NE555L	MC1455G	
ML211S	LM211H		NE555F	MC1455P1	
ML211T	LM211H		NE555T	MC1455G	
ML218F		MC1741SG	NE555V	MC1455F1	
ML218M		MC1741SG	NE556A	MC3456F	
ML218T		MC1741SG	NE556I	MC3456L	
ML301AP		LM301AN	NE556O		TL494
ML301AS	LM301AN		NE556I		MC3406O
ML301AT	LM301AH		NE559A	NE592A	
ML301P		LM301AH	NE592K	NE592K	
ML301S	LM301AN		NE556T	MC1456G	
ML301T	LM301AN		NE556V	MC1456F1	
ML3046P	HC3346F		NE558F	MC1458G	
ML307P		LM307H	NE558T	MC1458G	
ML307S	LM307N		NE558V	MC1458P1	
ML307T	LM307H		NE559A	MC1495L	
ML308AM	LM308AJ		NE559F	MC1495L	
ML308AT	LM308AH		NE559G	MC1496L	
ML308M	LM308J		NE559K	MC1496G	
ML308T	LM308H		NE5709A	MC1709CP2	
ML311M	LM311J		NE5709T	MC1709CG	
ML311P	LM311J		NE5709V	MC1709CP1	
ML311S	LM311N		NE5710A	MC1710CP	
ML311T	LM311N		NE5710T	MC1710CG	
ML318M		MC1741SCP1	NE5711A	MC1711CP	
ML318T		MC1741SCG	NE5711K	MC1711CG	
ML4250CS		MC1776CG	NE5723A		MC1723CP
ML4250CT		MC1776CG	NE5723T	MC1723CG	
ML4250T		MC1776CG	NE5733K	MC1733CG	
ML4251CS		MC1776CG	NE5741A	MC1741CP2	
ML4251CT		MC1776CG	NE5741T	MC1741CG	
ML4251T		MC1776G	NE5741V	MC1741CP1	
ML6503M		MC1537L	NE5747A	MC1747CL	
ML709AM	MC1709AL		NE5747F	MC1747CL	
ML709AT	MC1709AG		NE5748A		MC1747CG
ML709CP	MC1709CP2		NE5748T	MC1748CG	
ML709CT	MC1709CG		N8T15A	MC1488L	
ML709M	MC1709L		N8T15F		MC1488L
ML709T	MC1709G		N8T16A		MC1489L
ML723CF		MC1723CL	N8T17A	MC3437F	
ML723CP	HC1732CL		N8T95D	MC8T95P	
ML723CT	HC1723CG		N8T95F	MC8T95L	
ML723F		MC1723L	N8T96D	MC8T96P	
ML723M	MC1723L		N8T96F	MC8T96L	
ML723T	MC1723G		N8T97B	MC8T97P	
ML741AF		MC1556G	N8T97F	MC8T97L	
ML741AM		MC1556G	N8T98B	MC8T98P	
ML741AT		MC1556G	N8T98F	MC8T98L	
ML741CP	MC1741CP2		OP-01C		MC1536
ML741CL	MC1741CL		OP-01G		MC1536
ML741CS	MC1741CP1		OP-01H		MC1536
ML741CT	MC1741CG		OP-01J		MC1536G
ML741H	MC1741L		OP-01L		MC1536G
ML741T	MC1741G		OP-01P		MC1536P
ML747CT	MC1741CG		OP-08		MC1776
ML747H	MC1747L		OP-08A		MC1776
ML747T	MC1747G		OP-08B		MC1776
ML748CP		LH310AN	OP-08C		MC1776
ML748CS	LM301AH		OP-27AJ	OP-27AJ	
ML748CT	MC1748CG		OP-27AZ	OP-27AZ	
ML748F		MC1748G	OP-27BJ	OP-27BJ	
ML748M		MC1748G	OP-27BZ	OP-27BZ	
ML748T	MC1748G		OP-27CJ	OP-27CJ	
ML7503M		MC1437L	OP-27CZ	OP-27CZ	
MP5531AJ	MC1500AG5		OP-27EJ	OP-27EJ	
MP5531AJ	MC1500AG10		OP-27EP	OP-27EP	
MP5531BJ	MC1500G5		OP-27EZ	OP-27EZ	
MP5531BJ	MC1500G10		OP-27FJ	OP-27FJ	
MP5531CP	MC1404U5		OP-27FP	OP-27FP	
MP5531CP	MC1404U10		OP-27FZ	OP-27FZ	
MP5531DP	MC1404U5		OP-27GJ	OP-27GJ	
MP5531EJ	MC1400AG5		OP-27GP	OP-27GP	
MP5531HJ	MC1400G5		OP-27GZ	OP-27GZ	
MP5532DP	MC1404U10		OP-37AJ	OP-37AJ	
MP5532EJ	MC1400AG10		OP-37AZ	OP-37AZ	
MP5532HJ	MC1400G10		OP-37BJ	OP-37BJ	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
OP-37BZ	JP-37BZ		REF-02DJ	MC1404U5	MC1404U5
OP-37CJ	OP-37CJ		REF-02DP	MC1404U5	
OP-37CZ	OP-37CZ		REF-02DZ	MC1404U5	
OP-37LJ	OP-37EJ		REF-02EJ	MC1400AG5	
OP-37LP	OP-37EF		REF-02EZ		MC1400AG5
OP-37LZ	OP-37EZ		RLF-02HJ	MC1400G5	
OP-37FJ	OP-37FJ		RLF-02HP		MC1400G5
OP-37FP	OP-37FF		RLF-02HZ		MC1400G5
OP-37FZ	OP-37FZ		RLF-02J	MC1500C5	
OP-37GJ	OP-37GJ		RLF-02Z		MC1500G5
OP-37GP	OP-37GF		RM1514DC	MC1514L	
OP-37GZ	OP-37GZ		RM1537D	MC1537L	
PBL3708		UAA1016	RM1537D		
PBL3714		UAA1016	RM4136J		MC3503L
PBL3717		SAA102A	RM4195T		MC3503L
PWM125AK	SG1525AJ		RM4195TI		MC1568G
PWM125BK	SG2525AJ		RM4558D	MC4558L	MC1568P
PWM125CK	SG3525AJ		RM4558JG	MC4558L	
RC1414DC	MC1414L		RM4558L	MC4558G	
RC1414DP	MC1414F		RM4558T	MC4558G	
RC1436J		MC3403L	RM702T	MC1721G	
RC1437D	MC1437L		RM709D	MC1709L	
RC1437DP	MC1437F		RM709T	MC1709G	
RC1458DI	MC1458F1		RM710L	MC1710L	
RC1458T	MC1458G		RM710T	MC1710G	
RC1488DC	MC1488L		RM711DC	MC1711L	
RC1489ADC	MC1489AL		RM711T	MC1711G	
RC1489DC	MC1489L		RM723D	MC1723L	
RC1556T	MC1456CG		RM723T	MC1723G	
RC1558T	MC1558G		RM733L	MC1733L	
RC3302DU	MC33C2F		RM733T	MC1733G	
RC4131DF		MC1471SCP1	RM741L	MC1741L	
RC4131T		MC1741SG	RM741P	MC1741P	
RC4136D		MC3403L	RM741T	MC1741G	
RC4136DP		MC3403F	RM747D	MC1747L	
RC4136H		MC3403F	RM747T	MC1747G	
RC4195T		MC1468G	RM748T	MC1748G	
RC4195TK		MC1468F	RV3301D	MC3301P	
RC4444R	MC3416L		SC440		TDA1105
RC4558DI	MC4558CP1		SC441C		UAA1016
RC4558JG	MC4558CU		SE501H		MC1733G
RC4558L	MC4558CG		SE531G		MC1539G
RC4558P	MC4558CP1		SE531T		MC1539G
RC4558T	MC4558CG		SE533G		MC1776G
RC709D	MC1709CL		SE533T		MC1776G
RC709DN	MC1709CP1		SE537G		MC1556G
RC709LP	MC1709CP2		SE537T		MC1556G
RC709T	MC1709CG		SE550L		MC1723G
RC710DC	MC1710CL		SE555JG	MC1555U	
RC710DP	MC1710CP		SE555L	MC1555G	
RC710T	MC1710CG		SE55T	MC1555G	
RC711DC	MC1711CL		SE556A	MC3556L	
RC711DP	MC1711CP		SE592A	SE592L	
RC711T	MC1711CG		SE592K	SE592G	
RC723L	MC1723CL		SFC2101AM	LM101AH	
RC723T	MC1723CG		SFC2107H	LM107H	
RC733D	MC1733CL		SFC2108AM	LM108AH	
RC733T	MC1733CG		SFC2109H	LM109H	
RC741D	MC1741CL		SFC2109RM	LM109K	
RC741DN	MC1741CP1		SFC2111H	LM111H	
RC741DP	MC1741CP2		SFC2201AM	LM201AH	
RC741T	MC1741CG		SFC2207H	LM207H	
RC747D	MC1747CL		SFC2208AM	LM208AH	
RC747T	MC1747CG		SFC2209H	LM209H	
RC748T	MC1748CG		SFC2209RM	LM209K	
RC75107AD	MC75107L		SFC2211H	LM211H	
RC75107ADP	MC75107P		SFC2301ADC	LM301AJ	
RC75108AD	MC75108L		SFC2301ADP	LM301AH	
RC75108ADP	MC75108P		SFC2301AM	LM301AJ	
RC75109D		MC755110L	SFC2308ADC	LM308AJ	
RC75109EP		MC755110P	SFC2308ADP	LM308AH	
RC75110D	MC755110L		SFC2308AM	LM308AH	
RC75110P	MC755110P		SFC2309CM	LM309H	
REF-01AJ	MC1500AG10		SFC2309RM	LM309K	
REF-01AZ		MC1500AG10	SFC2311CM	LM311H	
REF-01CJ		MC1404U10	SFC2311DC	LM311J	
REF-01CP	MC1404U10		SFC2311DP	LM311N	
REF-01CZ	MC1404U10		SFC2723C	MC1723CG	
REF-01DJ		MC1404U10	SFC2723LC	MC1723CF	
REF-01DP	MC1404U10		SFC2723JM	MC1723L	
REF-01DZ	MC1404U10		SFC2723H	MC1723G	
REF-01EJ	MC1400AG10		SFC2741C	MC1741CG	
REF-01EZ		MC1400AG10	SFC2741GC	MC1741CL	
REF-01HJ	MC1400G10		SFC2741H	MC1741G	
REF-01HF		MC1400G10	SFC2747C	MC1747G	
REF-01HZ		MC1400G10	SFC2747H	MC1747G	
REF-01I	MC1500G10		SFC2748C	MC1748CG	
REF-01Z		MC1500G10	SFC2748H	MC1748G	
REF-02AJ	MC1500AG5		SFC2776C	MC1776CG	
REF-02AZ		MC1500AG5	SFC2776H	MC1776G	
REF-02CJ		MC1404U5	SFC2805EC	MC7805CT	
REF-02CP	MC1404U5		SFC2805KC	MC7805CT	
REF-02CZ	MC1404U5		SFC2805RC	MC7805CK	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
SFC2805KM	MC7805K		SG1502N		MC1568L
SI C2806LC	MC7806CT		SG1503	MC1503L	
SI C2806LEC	MC7806CT		SG1524J		MC3520L
SI C2806KC	MC7806CK		SG1525AJ	SG1525AJ	
SFC2806KM	MC7806K		SG1526J	SG1526J	
SFC2808LC	MC7808CT		SG1527AJ	SG1527AJ	
SI C2808LLC	MC7808GCT		SG1536T	MC1536C	
SI C2808KC	MC7808CK		SG1556T	MC1556C	
SFC2808KM	MC7808K		SG1558T	MC1558C	
SFC2812LC	MC7812CT		SG1595D	MC1595L	
SI C2812LEC	MC7812CT		SG1596T	MC1596C	
SFC2812KC	MC7812CK		SG1596T		
SFC2812RK	MC7812K		SG1660J		LM301AH
SFC2815LC	MC7815CT		SG1660J		LM308J
SFC2815LC	MC7815CT		SG1660M		LM308H
SFC2815LC	MC7815CK		SG1660T		LM308H
SFC2815H	MC7815K		SG1760D		LM307H
SFC2818LC	MC7818CT		SG1760F		LM307H
SFC2818LEC	MC7818CT		SG1760J		LM308J
SFC2818KC	MC7818CK		SG1760M		LM308H
SFC2818H	MC7818K		SG1760T		LM308H
SFC2824LC	MC7824CT		SG200T		MC1723G
SFC2824LEC	MC7824CT		SG201AD		LM201AH
SFC2824KC	MC7824CK		SG201AM	LM201A	
SFC2824KM	MC7824K		SG201AN		LM201AH
SG100T		MC1723G	SG201AT	LM201A	
SG101AD		LM101AH	SG201J		LM201AH
SG101AT	LM101A		SG201K	LM201A	
SG101J		LM101AH	SG201L		LM201AH
SG101T	LM101A		SG201T	LM201A	
SG107J		LM107H	SG207J		LM207H
SG107T	LM107H		SG207M		LM207H
SG108AJ	LM108AJ		SG207N		LM207H
SG108AT	LM108AH		SG207L		
SG108J	LM108J		SG207T	LM207H	
SG108T	LM108H		SG208AJ	LM208AJ	
SG109F	LM109K		SG208AM	LM208AJ-8	
SG109T	LM109H		SG208AT	LM208AH	
SG111D	LM111J		SG208J	LM208J	
SG111T	LM111H		SG208H	LM208J-8	
SG1118AJ		LM108AJ	SG208T	LM208H	
SG1118AT		LM108AH	SG209K	LM209K	
SG1118J		LM108J	SG209T	LM209H	
SG1118T		LM108H	SG211D	LM211J	
SG117K	LM117K		SG211M	LM211H	
SG117T	LM117H		SG211T		
SG118J		MC1741SL	SG2118AJ		LM208AJ
SG118T		MC1741SG	SG2118AK		LM208AJ-8
SG120K-05	LM120K-05		SG2118AT		LM208AH
SG120K-12	LM120K-12		SG2118J		LM208J
SG120K-15	LM120K-15		SG2118M		LM208J-8
SG120K-5.2		MC7905.2CK	SG2118T		LM208H
SG120T-05	LM120T-05		SG217K	LM217K	
SG120T-12	LM120T-12		SG217T	LM217H	
SG120T-15	LM120T-15		SG218J		MC1741SL
SG120T-5.2		MC7905.2CK	SG218M		MC1741SL
SG1217		MC1741C	SG218T		MC1741SG
SG1217J		MC1741SL	SG224J	LM224J	
SG124J	LM124J		SG224L	LM224N	
SG1250T		MC1776G	SG2250T		MC1776G
SG1256T		MC1776G	SG237K	LM237K	
SG137K	LM137K		SG237T	LM237H	
SG137T	LM137H		SG2402N		
SG140K-05	LM140K-5.0		SG2402T		
SG140K-06	LM140K-6.0		SG250K	LM250K	
SG140K-08	LM140K-8.0		SG2501AD		
SG140K-12	LM140K-12		SG2501AT		
SG140K-15	LM140K-15		SG2501D	MC1468L	
SG140K-18	LM140K-18		SG2501N	MC1468L	
SG140K-24	LM140K-24		SG2501T	MC1468G	
SG1402N		MC1594L	SG2502D		MC1468L
SG1402T		MC1594L	SG2502N		MC1468L
SG1436CT	MC1436CG		SG2502T		MC1468G
SG1436M	MC1436U		SG2503	MC1403AU	
SG1436T	MC1436G		SG2524J		
SG1456CT	MC1456CG		SG2525AJ	SG2525AJ	
SG1456T	MC1456C		SG2525AN	SG2525AN	
SG1458M	MC1458P1		SG2526J	SG2526J	
SG1458T	MC1458G		SG2526N	SG2526H	
SG1463J	MC1468L		SG2527AJ	SG2527AJ	
SG1463N	MC1468L		SG2527AN	SG2527AN	
SG1468T	MC1468G		SG300H		
SG1495D	MC1495L		SG300T		MC1723CP
SG1495N	MC1495L		SG301AD		MC1723CG
SG1496D	MC1496L		SG301AM	LM301AH	LM301AH
SG1496H		MC1496L	SG301AN		LM301AH
SG1496T		MC1496L	SG301AT	LM301AH	
SG150K	MC1496G		SG302K-5.2		MC7905.2CK
SG1501AD	LM150K		SG307J		LM307N
SG1501AT		MC1568L	SG307M	LM307N	
SG1501P	MC1568L	MC1568G	SG307H		
SG1501T	MC1568G		SG307I		LM307N
SG1502D		MC1568L	SG307T	LM307H	
			SG308AJ	LM308AJ	
			SG308AM	LM308AN	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
SG308AT	LM308AH		SG723CD	MC1723CL	
SG308J	LM308J		SG723CN	MC1723CP	
SG308H	LM308H		SG723CT	MC1723CG	
SG308T	LM308T		SG723D	MC1723L	
SG309K	LM309K		SG723T	MC1723G	
SG309T	LM309T		SG733CD	MC1733CL	
SG311L	LM311J		SG733CN		MC1733CP
SG311H	LM311H		SG733CT	MC1733CG	
SG311T	LM311T		SG733D	MC1733L	
SG3118AJ		LM308AL	SG733H		MC1733L
SG3118AT		LM308AP1	SG733T	MC1733G	
SG3118J		LM308AG	SG741CF	MC1741CF	
SG3118M		LM308L	SG741CM	MC1741CF1	
SG3118T		LM308P1	SG741CN	MC1741CF2	
SG317K	LM317K	LM308G	SG741CT	MC1741CG	
SG317P	LM317P		SG741D	MC1741L	
SG317T	LM317T		SG741SCM	MC1741SCF1	
SG318J			SG741SCT	MC1741SCG	
SG318H		MC1741SCL	SG741ST	MC1741SG	
SG318T		MC1741CP1	SG741T	MC1741G	
SG320K-05		MC1741CG	SG747CN	MC1747CP2	
SG320K-12		MC7905CK	SG747CT	MC1747CG	
SG320K-15		MC7912CK	SG747J	MC1747L	
SG320T-05		MC7915CK	SG747T	MC1747G	
SG320T-12		MC7905CT	SG748CD		MC1748CP1
SG320T-15		MC7912CT	SG748CM		MC1748CP1
SG320T-15.2		MC7915CT	SG748CN		MC1748CP1
SG320T-5.2		MC7905.2CT	SG748CT	MC1748CG	
SG324J	LM324J		SG748U		MC1748G
SG324H	LM324H		SG748T	MC1748G	
SG3250T		MC1776G	SG757CJ	MC1747CL	
SG337K	LM337K		SG777CJ		LM308AJ
SG337P	LM337P		SG777CM		LM308AN
SG337T	LM337H		SG777CN		LM308AN
SG340K-C5	LM7805CK		SG777CT		LM308AH
SG340K-C6	MC7806CK		SG777J		LM108AJ
SG340K-C8	MC7808CK		SG777T		LM108AH
SG340K-12	MC7812CK		SG7805CK	MC7805CK	
SG340K-15	MC7815CK		SG7805K	MC7805CK	
SG340K-18	MC7818CK		SG7806CK	MC7806CK	
SG340K-24	MC7824CK		SG7806K	MC7806K	
SG3402H		MC1494L	SG7808CK	MC7808CK	
SG3402T		MC1494L	SG7808K	MC7808CK	
SG350K	LM350K		SG7812CK	MC7812CK	
SG3501AL	MC1468L		SG7812K	MC7812CK	
SG3501AT	MC1468G		SG7815CK	MC7815CK	
SG3501D	MC1468L		SG7815K	MC7815CK	
SG3501N	MC1468L		SG7818CK	MC7818CK	
SG3501T	MC1468G		SG7818K	MC7818CK	
SG3502D		MC1468L	SG7824CK	MC7824CK	
SG3502G		MC1468G	SG7824K	MC7824CK	
SG3502H		MC1468L	SH8090FM		MC1508L8
SG3503	MC1403U		SH75107AJ	MC75107L	
SG3523H	MC3423P1		SH75107AN	MC75107P	
SG3523J	MC3423U		SH75107DN	MC75107P	
SG3524J		TL494CJ	SH75108AJ	MC75108L	
SG3525AJ	SG3525AJ		SH75108AN	MC75108P	
SG3525AN	SG3525AN		SH75108LJ		MC75108L
SG3526J	SG3526J		SH75108K		MC75108P
SG3526N	SG3526N		SH75125J	MC75125L	
SG3527AJ	SG3527AJ		SH75125L	MC75125P	
SG3527AL	SG3527AN		SH75127J	MC75127L	
SG3542J		MC3423U	SH75127N	MC75127P	
SG3542N		MC3423P1	SH75128J	MC75128L	
SG3543J		MC3425U	SH75128N	MC75128P	
SG3543N		MC3425P1	SH75129J	MC75129L	
SG3544J		MC3424L	SH75129N	MC75129P	
SG4250CH		MC1776CP1	SH75138J		MC3443AP
SG4250CT		MC1776CG	SH75138N		MC3443AP
SG4250T		MC1776G	SH75150J		MC1488L
SG4501D	MC1468L		SH75150N		MC1488P
SG4501H	MC1468L		SH75154J		MC1489L
SG4501T	MC1468G		SH75154N		MC1489P
SG555CK	MC1455P1		SH75172J	SN75172J	
SG555CT	MC1455G		SN75172H	SN75172N	
SG555T	MC1555G		SN75173J	SN75173J	
SG556CJ	MC3456L		SN75173H	SN75173N	
SG556CN	MC3456P		SH75174J	SN75174J	
SG556J	MC3556L		SH75174N	SN75174N	
SG556N	MC3556L		SH75175J	SN75175J	
SG710CD	MC1710CL		SH75176J	SN75176J	
SG710CD	MC1710CL		SH75176H	SN75176N	
SG710CN	MC1710CF		SH75177J	SN75177J	
SG710CT	MC1710CG		SH75177H	SN75177N	
SG710D	MC1710L		SH75178J	SN75178J	
SG710H	MC1710P		SH75178H	SN75178N	
SG710T	MC1710G		SH75188J	MC1488L	
SG711CD	MC1711CL		SH75188H	MC1488P	
SG711CN	MC1711CP		SH75189AL	MC1489AL	
SG711CT	MC1711CG		SH75189AN	MC1489AP	
SG711D	MC1711L		SH75189L	MC1489L	
SG711H	MC1711P		SH75189N	MC1489P	
SG711N	MC1711G		SH75207J		MC75107L

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
SN75207H		MC75107P	TDB0084DP	MC34004P	
SN75208J		MC75108L	TDB0117	LM317K	
SN75208H		MC75108P	TDB0117CM	LM317H	
SN75466J	MC1411L		TDB0117KM	LM317K	
SN75466H	MC1411P		TDB0117SP	LM317T	
SN75467J	MC1412L		TDB0117T	LM317T	
SN75467H	MC1412P		TDB0123KM	LM323K	
SN75468J	MC1413L		TDB0137CM	LM337H	
SN75468H	MC1413P		TDB0137KM	LM337K	
SN75475JG	MC1472L		TDB0351ACR	MC34001AC	
SN75475P	MC1472F1		TDB0351ADP	MC34001AF	
SN75715H	SN75175N		TDB0351BCH	MC34001BG	
SN76104H		MC1310P	TDB0351DDP	MC34001DF	
SN76105H		MC1310P	TDB0351CM	MC34001G	
SN76111H		MC1310P	TDB0351DP	MC34001P	
SN76113H		MC1310P	TDB0353ACH	MC34002AG	
SN76115H	MC1310P		TDB0353ADP	MC34002AF	
SN76116H	UA758A		TDB0353BCH	MC34002BG	
SN76117H		MC1310P	TDB0353DDP	MC34002DF	
SN76514L		MC1496G	TDB0353CM	MC34002G	
SN76514H	MC1496P		TDB0353DP	MC34002P	
SSS101AJ	LM101AF		TDB0555	MC1455C	
SSS101AL		LM101AH	TDB0555B	MC1455F1	
SSS107J	LM107H	LM107H	TDB0556A	MC3456P	
SSS107P		LM107H	TDB0723	MC1723CG	
SSS1408A-6Z	MC1408L6		TDB0723A	MC1723CP	
SSS1408A-7Z	MC1408L7		TDB137SP	LM337T	
SSS1408A-8Z	MC1408L8		TDB2905KM	MC7905CK	
SSS1458J	MC1458C		TDB2905SP	MC7905CT	
SSS1508A-8Z	MC1508L8		TDB2912KM	MC7912CK	
SSS1558J	MC1558G		TDB2912SP	MC7912CT	
SSS201AJ	LM201AH		TDE2915KM	MC7915CK	
SSS201AL		LM201AH	TDE2915SP	MC7915CT	
SSS201AF		LM201AH	TDE78XX	MC78XXCK	
SSS207J	LM207H	LM207H	TDE78XXT	MC78XXCT	
SSS207P		LM207H	TDC0117	LM117K	
SSS301AJ	LM301AH	LM301AH	TDC0117CM	LM117H	
SSS301AL		LM301AH	TDC0117KM	LM117K	
SSS301AF	LM301AH	LM301AH	TDC0123KM	LM123K	
SSS741BJ		MC1741G	TDC0137CM	LM137H	
SSS741BF	MC1741F2		TDC0137KM	LM137K	
SSS741CJ		MC1741CG	TDC0555	MC1555G	
SSS741CP	MC1741CP2		TDC0723	MC1723G	
SSS741GJ	MC1741SG		TDC2905KM	MC7905K	
SSS741GP		MC1741SG	TDC2912KM	MC7912K	
SSS741J	MC1741P		TDC2915KM	MC7915K	
SSS741P	MC1741P2		TDC78XX	MC78XXK	
SSS747BP	MC1747L		TDE0117CM	LM217H	
SSS747CK	MC1741CG		TDE0117KM	LM217K	
SSS747CF	MC1747CL		TDE0123KM	LM223K	
SSS747G	MC1747G		TDE0137CM	LM237H	
SSS747GP	MC1747L		TDE0137KM	LM237K	
SSS747P		MC1747L	TLA1007		TDA1185A
SSS56T	MC1556G		TLA1039		TDA4600
SSS58E	MC1558L		TLA1510	UAA101G	
SSS58T	MC1558G		TEA1511		UAA1016
SSS596F	MC1596L		TL022CJG		LM358J
SSS596K	MC1596G		TL022CL		LM358H
SS709G	MC1709F		TL022CP		LM358N
SS709T	MC1709G		TL022HJG		LM158J
SS710T	MC1710G		TL022HL		LM158H
SS711K	MC1711G		TL04MJ		LM124J
SS723T	MC1723G		TL044CJ		LM324J
SS733K	MC1733G		TL044CN		LM324N
SS741T	MC1741G		TL071ACJG	TL071ACJG	
S8T13L		MC8T13L	TL071ACL	TL071ACL	
S8T14E		MC8T14L	TL071ACP	TL071ACP	
TAA521	MC1709CG		TL071BCJG	TL071BCJG	
TAA521A	MC1709CP2		TL071BCL	TL071BCL	
TAA522	MC1709G		TL071BCP	TL071BCP	
TAA630		MC1327HP	TL071CJG	TL071CJG	
TBA1190Z		TDA3190P	TL071CL	TL071CL	
TBA120S		TBA1206C	TL071CP	TL071CP	
TDA221	MC1741CG		TL072ACJG	TL072ACJG	
TDA221A	MC1741CP2		TL072ACL	TL072ACL	
TDA221B	MC1741CP1		TL072ACP	TL072ACP	
TBA222	MC1741G		TL072BCJG	TL072BCJG	
TBB0324A	LM324N		TL072BCL	TL072BCL	
TBB0747A	MC1747CP2		TL072BUP	TL072BUP	
TBB0748	MC1748CG		TL072CJG	TL072CJG	
TBB0748B	MC1748CP1		TL072CL	TL072CL	
TBB1458	MC1458G		TL072CP	TL072CP	
TBB1458B	MC1458P1		TL074ACJ	TL074ACJ	
TBB747	MC1747CG		TL074ACL	TL074ACL	
TBC0747	MC1747G		TL074BCJ	TL074BCJ	
TBC0748	MC1748G		TL074BCN	TL074BCN	
TBC1458	MC1558G		TL074CJ	TL074CJ	
TDA1023		TDA1185A	TL074CN	TL074CN	
TDA1024		UAA1004	TL081ACJG	TL081ACJG	
TDA1060		TDA4600	TL081ACL	TL081ACL	
TDA1190Z		TDA3190P	TL081ACP	TL081ACP	
TDA2085A		TDA1285A	TL081BCJG	TL081BCJG	
TDB0084DG	MC34004L		TL081BCL	TL081BCL	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
TL081LCP	TL081LCP		UAF772LPC		MC34002P
TL081CJG	TL081CJG		UAF772LRC	MC34002L	
TL081CL	TL081CL		UAF772LTC	MC34002F	
TL081CP	TL081CP		UAF772RC	MC34002U	
TL082ACJG	TL082ACJG		UAF772TC	MC34002F	
TL082ACL	TL082ACL		UAF774ADC	MC34004AL	
TL082ACP	TL082ACP		UAF774ADM	MC35004AL	
TL082CCJG	TL082CCJG		UAF774APC	MC34004AF	
TL082BCL	TL082BCL		UAF774BDC	MC34004EL	
TL082LCP	TL082LCP		UAF774BDM	MC35004BL	
TL082CJG	TL082CJG		UAF774BPC	MC34004BF	
TL082CL	TL082CL		UAF774DC	MC34004L	
TL082CP	TL082CP		UAF774LDC	MC34004L	
TL084ACJ	TL084ACJ		UAF774LPC	MC34004F	
TL084ACN	TL084ACN		UAF774PC	MC34004F	
TL084UCJ	TL084UCJ		UA080DM-1	MC1508L8	
TL084LCN	TL084LCN		UA0802DC-1	MC1408L8	
TL084CJ	TL084CJ		UA0802DC-2	MC1408L7	
TL084CN	TL084CN		UA0802DC-3	MC1408L6	
TL317LP	LM317LZ		UA0802PC-1	MC1408I8	
TL430CJG		TL431CJG	UA0802PC-2	MC1408F7	
TL430CLP		TL431CLP	UA0802PC-3	MC1408F6	
TL430CP		TL431CP	UA101AD		LM101AJ
TL430IJG		TL431IJG	UA101AF		LM101AJ
TL430ILP		TL431ILP	UA101AH	LM101AH	
TL430IP		TL431IP	UA101D		LM101AJ
TL430IJG		TL431HJG	UA101F		LM101AJ
TL431CJG	TL431CJG		UA101H	LM101AH	
TL431CLP	TL431CLP		UA107H	LM107H	
TL431CP	TL431CP		UA108AD	LM108AJ	
TL431IJG	TL431IJG		UA108AH	LM108AH	
TL431ILP	TL431ILP		UA108D	LM108J	
TL431IP	TL431IP		UA108H	LM108H	
TL431HJG	TL431HJG		UA109KM	LM109K	
TL494CJ	TL494CJ		UA117KM	LM117K	
TL494CN	TL494CN		UA1391PC	MC1391P	
TL494IJ	TL494IJ		UA1394PC	MC1394P	
TL494IN	TL494IN		UA1458CHC	MC1458CG	
TL494MJ	TL494MJ		UA1458CP	MC1458CP1	
TL495CJ	TL495CJ		UA1458CHC	MC1458CU	
TL495CN	TL495CN		UA1458CTC	MC1458CP1	
TL495IJ	TL495IJ		UA1458E	MC1458G	
TL495IN	TL495IN		UA1458HC	MC1558G	
TL495HJ	TL495HJ		UA1458P	MC1458P1	
TL497CJ		UC78S40PC	UA1458RC	MC1458BU	
TL497FJ		UC78S40DM	UA1458TC	MC1458P1	
TL594CJ	TL494CJ		UA1558E	MC1558G	
TL594CN	TL494CN		UA201AD		LM201AJ
TL594IJ	TL494IJ		UA201AF		LM201AJ
TL594IN	TL494IN		UA201AH	LM201AH	
TL594MJ	TL494MJ		UA201D		LM201AJ
TL595CJ	TL495CJ		UA201F		LM201AJ
TL595CN	TL495CN		UA201H	LM201AH	
TL595IJ	TL495IJ		UA207H	LM207H	
TL595IN	TL495IN		UA208AD	LM208AJ	
TL595HJ	TL495HJ		UA208AH	LM208AH	
UAA4001		TL494CN	UA208D	LM208J	
UAA4006		TDA4600	UA208F	LM208F	
UAF771AHC	MC34001AG		UA208H	LM208H	
UAF771AIP	MC35001AG		UA209KM	LM209K	
UAF771ARC	MC34001AU		UA2240DC		MC1455L
UAF771ARM	MC35001AU		UA2240DF		MC1555G
UAF771BHC	MC34001BG		UA2240PC		MC1455P1
UAF771BHM	MC35001BG		UA301AD		LM301AJ
UAF771BRC	MC34001BU		UA301AH	LM301AH	
UAF771BRM	MC35001BU		UA301AT	LM301AN	
UAF771BTC	MC34001BP		UA3045		MC3346P
UAF771HC	MC34001G		UA3046DC	MC3346P	
UAF771LHC	MC34001G		UA3054DC	CA3054P	
UAF771LRC	MC34001U		UA3064PC	MC1346P	
UAF771LTC	MC34001P		UA3065PC	MC1358P	
UAF771RC	MC34001U		UA307H	LM307H	
UAF771TC	MC34001P		UA307T	LM307N	
UAF772ADC		MC34002AU	UA308AD	LM308AJ	
UAF772ADM		MC35002AU	UA308AH	LM308AH	
UAF772AHC	MC34002AG		UA308C	LM308J	
UAF772AHM	MC35002AG		UA308H	LM308H	
UAF772APC		MC34002AP	UA3086DM	MC3386P	
UAF772ARC	MC34002AU		UA309KC	LM309K	
UAF772ARM	MC35002AU		UA311T	LM311N	
UAF772ATC	MC34002AP		UA317KC	LM317K	
UAF772BDC		MC34002BU	UA317UC	LM317T	
UAF772EDM		MC35002BU	UA3301P	MC3301P	
UAF772PHC	MC34002EG		UA3302P	MC3302P	
UAF772BHM	MC35002BG		UA3303P	MC3303P	
UAF772BPC		MC34002BP	UA3401P	MC3401P	
UAF772BRC	MC34002BU		UA3403D	MC3403L	
UAF772BRM	MC35002BU		UA3403P	MC3403P	
UAF772BTC	MC34002BP		UA4136DC		MC4741CL
UAF772DC		MC34002U	UA4136DM		MC4741CP
UAF772HC	MC34002G		UA4136PC		MC4741CP
UAF772LDC		MC34002U	UA430AWC		TL431CLP
UAF772LHC	MC34002G		UA431AWC	TL431CLP	

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
UA4558HC	MC4558CG		UA741RM	MC1741C	
UA4558TC	MC4558CP1		UA741SJC	MC1741CC	
UA4581M	MC4558G		UA741TC	MC1741CP1	
UA494DC	TL494CJ		UA742DC		CA3059
UA494DM	TL494MJ		UA746DC		MC1323P
UA494PC	TL494CN		UA746HC		MC1323P
UA555HC	MC1455G		UA747ADH		MC1747L
UA555HM	MC1555G		UA747CJ	MC1741CL	
UA555TC	MC1455F1		UA747CL	MC1747CG	
UA556DC	MC3456L		UA747CN	MC1747CF2	
UA556DM	MC3556L		UA747DC	MC1747CL	
UA556PC	MC3456F		UA747DM	MC1747L	
UA709ADH	MC1709AL		UA747EDC	MC1747CCBM	
UA709AHM	MC1709AG		UA747EHC	MC1747C1CM	
UA709AMJ	MC1709AL		UA747HC	MC1747CG	
UA709AHJG	MC1709AL		UA747HM	MC1747G	
UA709AML	MC1709AG		UA747HJ	MC1747L	
UA709CJ	MC1709CL		UA747HL	MC1747G	
UA709CJG	MC1709CU		UA747PC	MC1747CF2	
UA709CL	MC1709CG		UA748AHM		MC1743G
UA709CN	MC1709CP2		UA748CJ	MC1748CL	
UA709CP	MC1709CF1		UA748CJG	MC1748CL	
UA709DC	MC1709CL		UA748CL	MC1748CG	
UA709LM	MC1709L		UA748CN	MC1748CF2	
UA709HM	MC1709G		UA748CP	MC1748CF1	
UA709HJ	MC1709L		UA748CC	MC1748CL	
UA709HJG	MC1709L		UA748DM	MC1748L	
UA709HL	MC1709G		UA748HC	MC1748CG	
UA709PC	MC1709CP2		UA748HM	MC1748G	
UA709TC	MC1709CF1		UA748HJ	MC1748L	
UA710DC	MC1710CL		UA748HJG	MC1748L	
UA710DM	MC1710L		UA748HL	MC1748G	
UA710HC	MC1710CG		UA748TC	MC1748CP1	
UA710HM	MC1710G		UA753TC	MC1356P	
UA710PC	MC1710CP		UA758AF		MC1747G
UA711DC		MC1711CL	UA767DC		MC1310P
UA711DM	MC1711L		UA767PC		MC1310P
UA711HC	MC1711CG		UA772		MC1741S
UA711HM	MC1711G		UA772FC		MC340U2F
UA711PC	MC1711CP		UA775DC	LM339J	
UA715DC		MC1741SCL	UA775DM	LM339J	
UA715HC		MC1741SL	UA775PC	LM339N	
UA715HM		MC1741SCG	UA776DC		MC1776CG
UA723CF	MC1723CL		UA776DM		MC1776G
UA723CJ	MC1723CL		UA776HC	MC1776CG	
UA723CL	MC1723CG		UA776HM	MC1776G	
UA723CN	MC1723CP		UA776TC	MC1776CP1	
UA723DM	MC1723L		UA777CJ		LM308AJ-8
UA723F	MC1723L		UA777CJG		LM308AJ-8
UA723HC	MC1723CG		UA777CN		LM308AH
UA723HM	MC1723G		UA777CP		LM308AH
UA723HJ	MC1723L		UA777LC		LM308AJ-8
UA723ML	MC1723G		UA777HC		LM308AH
UA723PC	MC1723CP		UA777HJ		LM108AJ-8
UA725AHM		LM108AH	UA777HJG		LM108AJ-8
UA725CHC		LM308AH	UA777HL		LM108AH
UA725HC		LM308AH	UA777TC		LM308AH
UA725HM		LM108AH	UA78GHM		LM117K
UA73CJ	MC1733CL		UA78GKC		LM117K
UA732DC		MC1310P	UA78GKM		LM117K
UA732PC		MC1310P	UA78GU1C		LM317T
UA733CL	MC1733G		UA78H05KC		MC7805CK
UA733CN	MC1733CP		UA78L02ACJG		MC78L02ACG
UA733DC	MC1733CL		UA78L05ACJG	MC78L05ACP	MC7805ACG
UA733DM	MC1733L		UA78L05ACL	MC78L05ACG	
UA733HC	MC1733CG		UA78L05AHC	MC78L05ACP	
UA733HM	MC1733G		UA78L05AHC		MC78L05CG
UA733HJ	MC1733L		UA78L05CLP	MC78L05CP	
UA733ML	MC1733G		UA78L05HC	MC78L05CG	
UA734DC		LM311J	UA78L05WC	MC78L05CP	
UA734DM		LM311J	UA78L06ACJG		MC78L06ACG
UA734HC		LM311H	UA78L06ACL	MC78L06ACP	
UA734HM		LM311H	UA78L06CJG		MC78L06CG
UA740HC		LF355H	UA78L06CLP	MC78L06CP	
UA740HM		LF155H	UA78L08ACJG		MC78L08ACG
UA741ADN		MC1741L	UA78L08ACL	MC78L08CP	
UA741AHM		MC1741G	UA78L08CJG		MC78L08CG
UA741CJ	MC1741CL		UA78L08CLP	MC78L08CP	
UA741CL	MC1741CG		UA78L12ACJG		MC78L12ACG
UA741CN	MC1741CP2		UA78L12ACL	MC78L12ACP	
UA741CP	MC1741CP1		UA78L12AHC	MC78L12ACG	
UA741DC	MC1741CL		UA78L12AHC	MC78L12ACP	
UA741DM	MC1741L		UA78L12AHC		MC78L12CG
UA741EDC		MC1741L	UA78L12CJG		
UA741EHC		MC1741G	UA78L12CLP	MC78L12CP	
UA741HC	MC1741CG		UA78L12HC	MC78L12CG	
UA741HM	MC1741G		UA78L12WC	MC78L12CP	
UA741HJ	MC1741L		UA78L15ACJG		MC78L15ACG
UA741HJG	MC1741U		UA78L15ACL	MC78L15ACP	
UA741ML	MC1741G		UA78L15AHC	MC78L15ACG	
UA741PC	MC1741CF2		UA78L15AHC	MC78L15ACP	
UA741RC	MC1741CU		UA78L15CJG		MC78L15CG

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
UA78L15CLP	MC7815CP		UA79M08CKC	MC7908CT	
UA78L15HC	MC78L15CC		UA79M08HM		MC7908CK
UA78L15WC	MC78L15CF		UA79M08UC		MC7908CT
UA78L26AWC	MC7802ACF		UA79M12AHM		MC7912CK
UA78MGHC		LM317H	UA79M12AUC		MC7912CT
UA78MGT2C		LM317T	UA79M12CKC	MC7912CT	
UA78MGU1C		LM317T	UA79M12HM		MC7912CK
UA78M05CKC	MC78M05CT		UA79M12UC		MC7912CT
UA78M05HC	MC78M05CC		UA79M15AHM		MC7915CK
UA78M05HM		MC78M05CG	UA79M15AUC		MC7915CT
UA78M05KC	MC78M05CT		UA79M15CKC	MC7915CT	
UA78M06CKC	MC78M06CT		UA79M15HM		MC7915CK
UA78M06HC	MC78M06CC		UA79M15UC		MC7915CT
UA78M06HM		MC78M06CG	UA79M18AHM		MC7918CK
UA78M06UC	MC78M06CT		UA79M18AUC		MC7918CT
UA78M08CKC	MC78M08CT		UA79M18HM		MC7918CK
UA78M08HC	MC78M08CC		UA79M18UC		MC7918CT
UA78M08HM		MC78M08CG	UA79M24AHM		MC7924CK
UA78M08UC	MC78M08CT		UA79M24AUC		MC7924CT
UA78M12CKC	MC78M12CT		UA79M24HM		MC7924CK
UA78M12HC	MC78M12CC		UA79M24UC		MC7924CT
UA78M12HM		MC78M12CG	UA7902KC	MC7902K	
UA78M12UC	MC78M12CT		UA7902KM		MC7902K
UA78M15CKC	MC78M15CT		UA7902UC	MC7902CT	
UA78M15HC	MC78M15CC		UA7905KC	MC7905CK	
UA78M15HM		MC78M15CG	UA7905KH		MC7905CK
UA78M15UC	MC78M15CT		UA7905UC	MC7905CT	
UA78M18HC	MC78M18CC		UA7906KC	MC7906CK	
UA78M18HM		MC78M18CG	UA7906KH		MC7906CK
UA78M18UC	MC78M18CT		UA7906UC	MC7906CT	
UA78M20CKC	MC78M20CT		UA7908KC	MC7908CK	
UA78M20HC		MC78M20CG	UA7908KH		MC7908CK
UA78M20HM	MC78M20CC		UA7908UC	MC7908CT	
UA78M24CKC	MC78M24CT		UA791KC		MC1438R
UA78M24HC	MC78M24CC		UA791KM		MC1538R
UA78M24HM		MC78M24CG	UA791P5		MC1438R
UA78M24UC	MC78M24CT		UA7912KC	MC7912CK	
UA78S40DC	UA78S40CC		UA7912KM		MC7912CK
UA78S40DM	UA78S40CM		UA7912UC	MC7912CT	
UA78S40PC	UA78S40CC		UA7915KC	MC7915CK	
UA7805CKC	MC7805CT		UA7915KH		MC7915CK
UA7805KC	MC7805CC		UA7915UC	MC7915CT	
UA7805KH	MC7805CT		UA7918CKC	MC7918CT	
UA7805UC	MC7805CT		UA7918KC	MC7918CK	
UA7806CKC	MC7806CT		UA7918KH		MC7918CK
UA7806KC	MC7806CC		UA7918UC	MC7918CT	
UA7806KH	MC7806CT		UA7924CKC	MC7924CT	
UA7806UC	MC7806CT		UA7924KC	MC7924CK	
UA7808CKC	MC7808CT		UA7924KH		MC7924CK
UA7808DC	MC7808CT		UA7924UC	MC7924CT	
UA7808KC	MC7808CC		UA796DC	MC1496L	
UA7808KH	MC7808CT		UA796DM	MC1596L	
UA7812CKC	MC7812CT		UA796HC	MC1496G	
UA7812KC	MC7812CC		UA796HM	MC1596G	
UA7812KH	MC7812CT		UA798HC	MC3458G	
UA7812UC	MC7812CT		UA798HM	MC3558G	
UA7815CKC	MC7815CT		UA798RC	MC3458U	
UA7815KC	MC7815CC		UA798RM	MC3558U	
UA7815UC	MC7815CT		UA798TC	MC3458P1	
UA7818CKC	MC7818CT		UA799HC		MC1741G
UA7818KC	MC7818CC		UA799HM		MC1741G
UA7818KH	MC7818CT		UA8T13DC	MC8T13L	
UA7818UC	MC7818CT		UA8T13PC	MC8T13P	
UA7824CKC	MC7824CT		UC1525A	SG1525A	
UA7824KC	MC7824CC		UC1527A	SG1527A	
UA7824KH	MC7824CT		UC2525A	SG2525A	
UA7824UC	MC7824CT		UC2527A	SG2527A	
UA79L05AHC	MC79L05ACG		UC2527A	SG2527A	
UA79L05AUC	MC79L05ACF		UC3525A	SG3525A	
UA79L05HC	MC79L05CG		UC494A	TL494	
UA79L05UC	MC79L05CC		UC495A	TL495	
UA79L12AHC	MC79L12ACG		UDM5712M	MC1472P1	
UA79L12AUC	MC79L12ACF		ULN2001A	ULN2001A	
UA79L12HC	MC79L12CC		ULN2002A	ULN2002A	
UA79L12UC	MC79L12CC		ULN2003A	ULN2003A	
UA79L15AHC	MC79L15ACG		ULN2004A	ULN2004A	
UA79L15AUC	MC79L15ACF		ULN2068D	ULN2068B	
UA79L15HC	MC79L15CC		ULN2111A	MC1357P	
UA79L15UC	MC79L15CC		ULN2111N	MC1357PG	
UA79M05AHM		MC7905CK	ULN2114A	MC1323P	
UA79M05AUC		MC7905CT	ULN2120A		MC1310P
UA79M05CKC	MC7905CT		ULN2121A		MC1310P
UA79M05HM		MC7905CK	ULN2122A		MC1310P
UA79M05UC		MC7905CT	ULN2139D		MC1439G
UA79M06AHM		MC7906CK	ULN2139H		MC1439CP2
UA79M06AUC		MC7906CT	ULN2139M		MC1439P1
UA79M06CKC	MC7906CT		ULN2139N		MC1439P1
UA79M06HM		MC7906CK	ULN2151D		MC1741CG
UA79M06UC		MC7906CT	ULN2151H		MC1741CP2
UA79M08AHM		MC7908CK	ULN2151K		MC1741CP1
UA79M08AUC		MC7908CT	ULN2156D		MC1456G
			ULN2156G		MC1456G
			ULN2156H		MC1456G

PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT	PART NUMBER	MOTOROLA DIRECT REPLACEMENT	MOTOROLA SIMILAR REPLACEMENT
ULN2156H		MC1456G	9614DC		MC755110L
ULN2157A		MC1458P2	9614DM		MC755110L
ULN2157H		MC1458P2	9615DC		MC75108L
ULN2157H		MC1458G	9616CDC		MC1488L
ULN2210A	MC1310P		9616DM		MC1488L
ULN2255A		MC1310P	9616EDC		MC1488L
ULN2741C		MC1741CG	9617DC		MC1489AL
ULN2747A		MC1747CL	9620DC		MC755110L
ULN2801A	ULN2801A		9620DM		MC755110L
ULN2802A	ULN2802A		9621DC		MC75108L
ULN2803A	ULN2803A		9624DC		MC0026CL
ULN2804A	ULN2804A		9624DM		MC0026CL
ULN8125A	SG3525L		9625DC		MC0026CL
ULN8125R	SG3525J		9625DM		MC0026CL
ULN8126	SG1526		9627CDC		MC1489AL
ULN8127A	SG3527H		9627DM		MC1489AL
ULN8127R	SG3527J		9636AT	MC3488AP1	
ULS2139D		MC1539G	9637T		MC3486P
ULS2139G		MC1539G	9638T		MC3487P
ULS2139H		MC1539L	9640D		MC3443AP
ULS2139H		MC1439P1	9640DC		MC3440AP
ULS215D		MC1741G	9640J	MC3443AP	
ULS2151H		MC151741L	9640NC	MC3440AP	
ULS2151H		MC1741CP1	9665DC	MC1411L	
ULS2151W		MC1556G	9665PC	MC1411P	
ULS2156D		MC1556G	9666DC	MC1412L	
ULS2156H		MC1556G	9666PC	MC1412P	
ULS2156H		MC1556G	9667DC	MC1413L	
ULS2157A		MC1558L	9667PC	MC1413P	
ULS2157H		MC1558L	9668DC	MC1416L	
ULS2157H		MC1558G	9668PC	MC1416P	
ULX8161H		MC34060P			
UPC3423	MC3423				
U211B		TDA1285A			
U217	UAA1016B				
U217B	UAA1016B				
U24J	UAA1041				
XR082CN	TL082CJG				
XR082CP	TL082CP				
XR082H	TL082MJG				
XR084CN	TL084CJ				
XR084CP	TL084CN				
XR084H	TL084MJ				
X3470A	MC3470AP				
ZH1060		TL494			
ZH1060		TL494			
1458CL	MC1458CG				
3232		MC3232AL			
55110DM		MC755110L			
6605J		MC3443P			
6605L		MC3443P			
709DE	MC1709G				
709DH	MC1709F				
709CE	MC1709CG				
709CH	MC1709CF				
709CJ	MC1709CP2				
710DE	MC1710G				
710CE	MC1710CG				
711DE	MC1711G				
711BN	MC1711L				
711CE	MC1711CG				
711CJ	MC1711CP				
723DE	MC1723G				
723CE	MC1723CG				
723CJ	MC1723CL				
741DE	MC1741G				
741DH	MC1741F				
741BN	MC1741L				
741CE	MC1741CG				
747DE		MC1747G			
747BN		MC1747L			
747CE		MC1747CG			
748DE		MC1748G			
748CE		MC1748CG			
75107ADC	MC75107L				
75107AFC	MC75107P				
75107EDC		MC75107L			
75107DFC		MC75107P			
75108ADC	MC75108L				
75108APC	MC75108P				
75108BDC		MC75108L			
75108BPC		MC75108P			
75110DC	MC755110L				
75110PC	MC755110P				
75207DC		MC75107L			
75207PC		MC75107P			
75208DC		MC75108L			
75208PC		MC75108P			
809DE		MC1776G			
809CE		MC1776CG			
8216		MC8T26AL			
8226		MC8T28L			
823AE		MC1723G			

